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THE FAR EASTERN REVIEW

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Younger Brother of the Prince Regent and of Prince Tsai Hsun.
In Command of the Imperial Guard Corps, Now in
Foreign Countries Studying Military Affairs.

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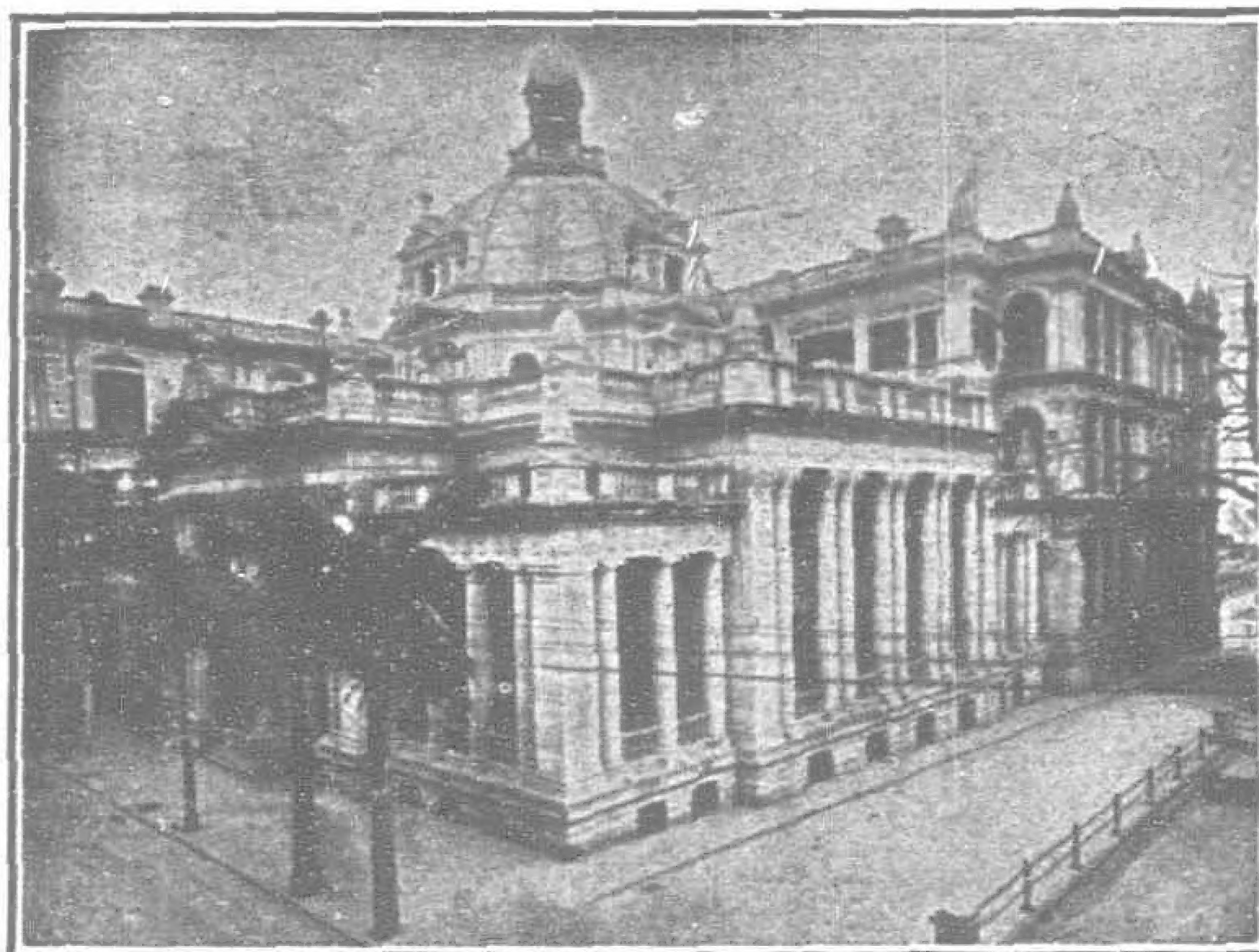
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COMMERCE • ENGINEERING • FINANCE

VOL. VII.

MANILA, P. I., SHANGHAI, AND YOKOHAMA, AUGUST, 1910

No. 3.

AMERICA IN CHINA (*)

By THOMAS F. MILLARD.

All great international crises have an issue which serves to formulate and focus the greater propositions involved. Recent events and present conditions indicate that the forthcoming crisis in the Far East will pivot upon the question of railway development in China.

Careful consideration of the beginnings and progress of railway development in China demonstrates that political rather than fiscal foreign interests predominated in drafting the terms by which they were built; indeed, this was so apparent that it soon provoked diplomatic action to check certain tendencies. The first important move of an international character *à propos* of these questions was the understanding arrived at among the principal foreign powers known as the Hay Agreement, which was promoted by the United States. Although this agreement is general in terms, and explicitly applies to the open door and integrity of China, the occasion of its being advanced was the tendency of railway agreements between China and foreign governments, the specific instance being some aspects of the German concession in Shantung. By this move the United States secured the assent of the greater powers to the principle that none would exploit railways in China for the advantage of itself and its nationals, and would not assert any exclusive or preferential privileges based on such concessions. Since the Hay Agreement was made public, in 1899, no foreign power has ventured openly to flout it until within the last few months, although it was surreptitiously evaded in many ways.

Prior and subsequent to acceptance by the powers of the principles of the Hay Agreement, numerous diplomatic communications passed between foreign nations and China, and between foreign nations concerning their mutual attitude toward questions involved therein. Some of these communications were secret, but the more important ones have been made public from time to time. Meanwhile came the Russo-Japanese war, which created a new balance of interest and provided eastern affairs with a new diplomatic basis. In the Portsmouth treaty

are the following clauses: "*The Imperial Government of Russia declare that they have not in Manchuria any territorial advantages or preferential or exclusive concessions in impairment of China's sovereignty or inconsistent with the prin-*



THOMAS F. MILLARD,
JOURNALIST AND AUTHOR.

ciple of equal opportunity;" and "*Japan and Russia reciprocally engage not to obstruct any general measures common to all countries which China may take for the development of the commerce and industry of Manchuria.*" The Anglo-Japanese alliance, and every international agreement which has been made public by governments since the Russo-Japanese war relating to China, has re-affirmed these principles.

I will not now review the commercial campaign of Japan in Manchuria and Korea immediately after the conclusion of peace, which made a mockery of the open door, but will confine discussion to the issue of railways. Soon after the war, China prepared to begin development of her Manchurian provinces, which long have been backward because of inacces-

sibility. Railways promise to change this, and to open the comparatively unsettled and fertile regions of the north to be populated and cultivated by Chinese emigrants from densely and over-populated provinces. What this means to China may be instantly perceived. Furthermore, it may be conceded that China probably has political considerations also in mind in these arrangements—it would be strange after her experience of recent years if she had not—and wishes by this means to drive a wedge between Japan and Russia, and open a way to preserve the neutrality of Chinese territory.

From China's standpoint these purposes are legitimate, and logically cannot be assumed to threaten any valid foreign right or interest. An extension of the Imperial Railways of North China northward to the Amur had been projected for years, and tentatively is marked on modern maps of the Empire. In 1897 China made a contract with a British firm (Pauling and Company) to build an extension of this railway from Hsinmintun to Fakumen. Objection was made by Japan on the ground that this extension would parallel part of the South Manchurian Railway, which Japan secured by the Portsmouth treaty, and she produced in support of her position an alleged *secret* clause of the Yuan-Komura agreement made between Japan and China, concerning Manchuria, in 1905. China denied that she had accepted this secret agreement; but Japan induced England to refuse support to the British firm, and China was compelled to abandon the project. This incident is significant in several ways, and especially because it is the first definite evidence of England's policy to support her ally in the north even at detriment to British commercial interests.

There is no doubt that China, in projecting extensions of her railways in Manchuria, designed to create there a wider international balance of interest, and to this end she desired them to be financed by British and Americans. In the summer of 1908 (August 11), Tang Shao-yi made an agreement with Willard Straight, then American Consul-General at Mukden, that American capital would be em-

(*) Published in the *Forum*, July, 1910.

played in constructing the section of the proposed line from Tsitsihar to Aigun, the idea then being that the southern section would be constructed by British interests. The deaths of the Emperor and Empress Dowager, the dismissal of Yuan Shih-k'ai and other events followed, and these projects were temporarily held in abeyance. Meanwhile, Mr. Straight had notified his government of the signing of the memorandum concerning the financing of the northern section of this railway, and soon afterward was himself transferred to the State Department, which he left in 1909 to become agent in China for the American Banking Group which, with the approval of the Government, was organized to finance American participation.

The Tsitsihar-Aigun section really provided the basis for organizing the American Banking Group, for it was a definite piece of business in sight; but even for a time obscured this project by arousing international comment about a similar matter. This is the attempt by China to finance various sections of railways designed to complete the Canton-Hankow and Hangkow-Chengtou lines, and which are grouped under the name of the Hukuang loans. This loan had been projected for several years, and in 1909 an agreement was formulated whereby it was to be financed and constructed, under the usual foreign loan stipulations with some modifications, with British, German and French capital. At this juncture the American Government reminded China that the Chinese Government specifically had promised that if when it was ready to build these roads it required foreign capital, American interests would have an opportunity to participate. When other foreign interests got wind of threatened American intervention, they tried to rush the matter to a conclusion, which brought about some rather sensational moves, including President Taft's personal telegram to the Regent asking that the agreement should not be concluded without American interests being given a chance to participate. As there was no legitimate ground for excluding Americans, the other foreign interests were impelled to assent to their participation, although there was some irritation over the matter. It was agreed to admit Americans, and then followed a period of negotiation about terms which lasted several months. Discussion turned upon how construction work of various sections is to be apportioned among the four foreign interests, and in this matter England took an attitude which has resulted in practically blocking progress. It was thought that a compromise had been reached, and a meeting of representatives of all interests was appointed at Peking for September 23, 1909, when the agreement was to be signed. At this meeting Mr. Hillier, the British representative, informed the other participants that he had been instructed by his principal, the Hong-kong and Shanghai Banking Cor-

poration, acting under instruction from the British Foreign Office, that he must not sign. The reasons nominally advanced by British interests for not signing the agreement as prepared are too complex to be elucidated here, but they involve no important principle and amount

agreement with British interests about the Fakumen section, although logically it had been abrogated when the project fell through because England would not support it. A result was that the British interest which had been thrown over by its own government in that matter came



H. E. TANG SHAO-YI
ENTERED INTO AGREEMENT WITH MR. WILLARD STRAIGHT IN 1908 THAT AMERICAN
CAPITAL WOULD BE EMPLOYED IN CONSTRUCTING PROPOSED LINE
FROM TSITSIHAR TO AIGUN.

to a dispute about small details and profits; which indicates beyond reasonable doubt that political considerations actuated the British Government in its action.

While negotiations concerning the Hukuang loan thus were being tied up by England, the representative of the American Banking Group had been busy about the matter of Manchurian railway extensions. Upon consultation with the Chinese Government Mr. Straight found that it wished if possible to keep its

to an agreement with the American Banking Group by which a consolidation was effected jointly to promote a railway from Chinchou to Aigun, penetrating the same territory which would have been opened by the Fakumen section, but keeping far enough away from the South Manchurian Railway to avoid Japanese objections. Americans are to finance and British to construct the road. China is very anxious to build this railway as soon as possible, as it has been delayed for years by

war and other causes. Semi-official attempts privately were made by British diplomatic representatives in Peking to prevent a consolidation of British and American interests in this project, and to induce the British contracting firm to join with Japanese interests in the matter; but the British firm objected to this affiliation on business grounds, and it also knew that China would rather not build the road than have it financed by Japan; moreover, it was a foregone conclusion that Russia would be alarmed—and justly too—by such an arrangement. It was thought by China and by the American Group that its participation would not cause alarm. On October 2, 1909, a preliminary agreement for construction and financing of the Chinchou-Aigun Railway was signed at Mukden by Viceroy Hsi-Liang for China, Willard Straight for the American Banking Group and Lord French for Pauling & Company. These negotiations were conducted with celerity and secrecy, for already diplomatic influence was being exerted to obstruct them. Japan, ever alert, had made inquiries of the Chinese Government, claiming that if anything was contemplated she ought to participate. Notwithstanding diplomatic pressure to prevent it, an Imperial edict ratifying the preliminary agreement was issued January 21, 1910. The British Foreign Office refused to join the State Department in requesting that the agreement be confirmed; but on the contrary notified the Wai Wu-pu that Japan should be consulted.

It now is necessary to go back to when the proposal internationally to neutralize all railways in Manchuria was made to the interested powers by Secretary Knox. This was presented simultaneously to Russia and Japan on December 18, 1909. Prior to this it had been laid before China, who was glad to assent, since its acceptance and promulgation would have relieved her of foreign interference in her northern provinces and clarified the whole eastern situation. The proposal was given publicity by Japan and Russia after they mutually had agreed to reject it. While those governments were making a pretense of taking time to consider the proposal (there is evidence that they agreed to reject it within a week after it was received), they began to exert pressure at Peking to prevent issuance of the edict ratifying the Chinchou-Aigun agreement. This is significant, for the Chinchou-Aigun Railway agreement was a factor in the matter, because it gave Americans and English a vested interest in Manchuria; and in proposing that a reversion of existing railways to China be financed by an international syndicate American interests had something to put into the pot. When it was known that an edict would be issued, effort to forestall it by previously announcing the rejection of the neutralization proposal was made, but the rejection came one day too late, on January 22. Perhaps before proceeding it should



H. E. HSI SIANG,
VICEROY OF MANCHURIA WHO SIGNED THE
CHINCHOU-AIGUN AGREEMENT FOR CHINA AT
MUKDEN IN OCTOBER, 1909.

be stated that the legal basis of the neutralization proposal is the vested right of China, by treaties with Japan and Russia, to purchase the Manchurian railways at a fair valuation at the end of a fixed period, now about 24 years distant; and this will be the eventual disposal of them unless Japan and Russia break the treaties; so Mr. Knox merely suggested that this recovery be anticipated.

I will discuss the reasons given by Japan and Russia for rejecting Mr. Knox's proposal only to discover their *bona fides*. There was an inspired outburst from the press of both countries characterized by a palpable effort to veil the facts with a cloud of false issues. Even statesmen joined in the chorus of misrepresentation. Count Hayashi talked about "confiscation"; which was rather an inadvertence, for Japan should be chary of referring to confiscation in connection with Manchuria. It hardly is necessary to say that the proposal contemplated that Japan and Russia would be paid for their interests. The official replies were evasive and give no specific reasons for declining. From Japan's reply one might glean that she fears that if she gives over her part of the railways to China, her business interests in Manchuria will suffer. It is not clear how, unless Japanese commerce and industry in Manchuria now enjoy special advantages from Japan's administration of the South Manchurian Railway; which Japan vociferously denies. Count Komura in an interview suggested that it would be unwise to "burden" China with the debt necessary to finance such a purchase. This is really funny. The South Manchurian Railway is now paying very well, I believe, and one hardly sees how China would suffer by possessing it providing she bought it at a fair price; moreover, Japan herself equipped it with borrowed capital, which she now owes. Russia made her official reply very vague, contenting herself with references to "interests" which would be detrimentally affected. Russia might, with some reason, have protested that it

would be a pity to load China with her part of the railways, which are now losing about \$2,500,000 a year owing to maladministration and peculations of officials and employees. It can be demonstrated, I think, that naturalization of Manchurian railways on the line of Mr. Knox's suggestion will benefit Russian interests both commercially and strategically, and she may soon awake to discover that she was Japan's cat's-paw in this matter. But I suppose no intelligent persons anywhere took the Japanese and Russian reasons for rejecting the proposal as seriously representing the real objections of those governments.

With the rejection of the Knox plan, which would have included the Chinchou-Aigun Railway, the diplomacy which is actively trying to keep American interests out of China was concentrated on it, and developments came rapidly. The issue raised in these negotiations contains the possible genesis of a great war which may involve the United States, and so at risk of being thought prolix I will elucidate their more important and significant phases. One cannot doubt, when the diplomatic representations are considered in sequence in the light of the existing international alignment in the East, that in this matter Russia, Japan, England and France acted by mutual agreement under a private understanding between those nations. While fully to comprehend their import requires some explanation, the various representations made in the course of putting the screws upon China and the handcuffs on American diplomacy in the Orient are extremely illuminating and significant, and I will quote the more important ones in full in the order of their presentation. In all quoted communications the italics are inserted by me for emphasis.

*The Japanese Minister to the Wai Wu-fu.
January 31, 1910.*

Your Excellency:

I formerly had a verbal interview with President Liang Tun-yen on the subject of the Chinchou-Aigun Railway and stated clearly to him the expectation of my Government. I also telegraphed my Government for instructions and have now a reply to the effect that this matter must be considered with extreme caution. My Government is now considering it and cannot hastily formulate its demands; but, as I formerly stated in my verbal interview, this is a matter which vitally affects Japan's interests. Before the Chinese Government determines anything, *the consent of my Government must first be obtained*. If the position of my country is ignored and a decision is made *without referring the matter to my Government*, it will be hard to estimate the *seriousness of the trouble* that may be caused in the relations of the two countries. I am therefore instructed to warn the Chinese Government that it must realize the necessity of caution.

With compliments, etc.

IJUN,

*The Russian Minister to the Wai Wu-pu.
February 2, 1910.*

Your Excellency:

Your Excellency formerly inquired of us verbally as to the view which my Government would take of assisting in the construction of the Chinchou-Aigun Railway. I referred the matter to my Government and now have the following reply:

The Russian Government regards this matter as one of extreme importance and until it has been carefully considered no reply can be made to China.

The Russian Minister is ordered to state clearly what he has already stated to the Wai Wu-pu, viz: that the Russian Government expects that China will not settle any such matter *without first consulting Russia. Otherwise there will be trouble in the relationship between the two countries.*

A necessary despatch, etc.

KOROSTOVETZ

*The Russian Minister to the Wai Wu-pu.
February 4, 1910.*

Your Excellency:

I have received a note from St. Petersburg regarding the concession to America to build the Chinchou-Aigun Railway.

The Russian Minister in America has already received instructions to give Russia's reply concerning the railway to the American Government as follows:

Since America has invited Russia to participate in the construction of the Chinchou-Aigun Railway and has consented to Russia's desire to take time for careful consideration of the matter before making a reply, the opinion of Russia is that in not notifying Russia and in not considering that in case Russia did not take a share she would oppose the undertaking America is conscious of having made a mistake and has therefore stopped the loan negotiations. Russia expects that nothing will be settled without first obtaining the consent of Russia.

I now transmit to your excellency the general sense of the above communication and notify your excellency that this matter *must not* be recklessly settled without first having obtained the consent of Russia.

A necessary despatch, etc.

KOROSTOVETZ

In this communication M. Korostovetz begins by stating that he transmits to the Wai Wu-pu a communication which had been communicated to the State Department by the Russian Minister at Washington. From the language of the second sentence one would think that note is quoted exactly. The brutal phraseology used in the above Japanese and Russian communications to China may be tolerable coming from powerful nations to one not now able to resent insult; but it is difficult to believe that the language stated by M. Korostovetz was addressed by Russia to the United States, or that any nation would so assert paramount authority in any matter under negotiation between the United States and any third nation. In the last sentence of this note the language of M. Korostovetz seems to imply that he merely desires to convey the "general sense"

of Russia's communication to the State Department. The Russian Government may deny that it did so address the United States in this matter, but it is a fact that the Russian Minister in Peking did send this note to the Wai Wu-pu, thereby causing China to think that Russia used arbitrary and dictatorial language in addressing America about relations between the United States and China. Moreover, M. Korostovetz's note contains several apparent mis-statements. He takes it upon himself, presuming to quote Russia's note to the State Department, to assert that America realized her mis-



HIS EXCELLENCY LIANG TUNG YEN,
PRESIDENT OF FOREIGN AFFAIRS WHO
MAINTAINED THAT CHINA CANNOT CONCEDE
THAT SHE SHOULD CONSULT ANY FOREIGN
NATION ABOUT DEVELOPMENT OF HER
RAILWAYS.

take in not recognizing that she must consult Russia about engaging in enterprises in China, and had quit the negotiations. This caused the Chinese Government to make inquiries, and Henry P. Fletcher, the American Chargé d'Affaires, assured the Wai Wu-pu that so far as he knew the American Government had not so informed Russia.

In this connection it should be remembered that the Chinchou-Aigun Railway project is not the child of an American group of financiers, but is a long-cherished design of China; moreover, Americans have all along been willing to admit other nationalities to share in the enterprise if China is willing. These points should be kept clearly in mind.

The Russian Minister to the Prince of Ch'ing. February 8, 1910.

Your Imperial Highness:

I formerly had a verbal interview and also sent notes to the Ministers of Your Highness's Board on the subject of the Chinchou-Aigun Railway. I have now received my Government's instructions in regard to the reply to the American proposition for the neutralization of the Manchurian Railways and the construction of the Chinchou-Aigun Railway in the form of a memorandum, which I forward herewith.

Enclosure. A necessary despatch, etc.

KOROSTOVETZ

*Memorandum in Regard to the Chinchou-Aigun Railway. Transmitted to the Prince of Ch'ing by the Russian Minister,
February 8, 1910.*

In respect to the expressed intention of the American Government to build a railway from Chinchou to Aigun, the Russian Government must declare clearly that this road would seriously affect the interests of Russia. This railway when completed would not only connect from the south with the Northern Manchurian Railway, but at Aigun would reach the actual territories of Russia. Thus it would affect both military and political arrangements and would materially change the relations of the Manchurian Railways the eastern Mongolia and northern Manchuria. Therefore this must be inquired into and an acceptable method of procedure must be decided upon, and it cannot be permitted unless the Russian Government first knows the particulars of the proposed arrangements. The Russian Government wishes to go into this matter very carefully, and expects that the plans will first be communicated to it. After carefully considering the plans the Russian Government will reply as to the construction of the railway, and will issue a definite pronouncement as to the conditions on which this railway may be built.

In regard to all future railways in Manchuria which China may propose to build with borrowed capital, the Russian Government must be first consulted and must first consider if the plans have any consequences to the military and political interests of Russia, or to the Northern Manchurian Railways, thereafter determining

what must be done to balance the influence of the arrangements made for the said railways.

Well, here we have it. All pretense that Russia's objection is based on possible commercial injury to the Chinese Eastern Railway—in fact, the construction of the Chinchou-Aigun Railway would have an opposite result—is dropped, and it clearly is stated that the chief objections are political and strategical. Which is to say that Russia formally asserts the right to regulate and control railway development within portions of China in the light of Russia's political and strategical interests, and to exclude American participation on these grounds. If language and all the logic of circumstances can make anything clear, it has done so in this instance. The fact that this memorandum was sent to Prince Ch'ing instead of to the Wai Wu-pu shows that all possible influences were being brought to bear to bully the latter, for it is well known that Prince Ch'ing takes slight interest in foreign affairs and does not keep posted about details. This move evidently was designed to frighten the Court, and bring indirect pressure to bear upon the ministers in the Wai Wu-pu.

At this point some of the reserves went into action. On February 9th, the day after the above memorandum was presented by the Russian Minister, Max Muller, the British Chargé d'Affaires, went to the Wai Wu-pu and discussed the matter with H. E. Liang Tun-yen. England was too foxy to put herself on record in writing; but Mr. Muller informed H. E. Liang Tun-yen that England feared China was going to be led into serious difficulty by America in this matter, and suggested caution, which was a diplomatic way of giving American interests a backset. He further stated definitely that his Government feels that China should consult Japan and Russia about railway development in Manchuria. About this time, also, the French Government came to the assistance of its ally in frightening China, and made representations.

The French Minister to the Wai Wu-pu.
February 10, 1910.

Your Excellency:

The French Government with a view to China's welfare intends requesting the Chinese Government not to make any agreement with any other nation regarding the Chinchou-Aigun Railway previous to consulting Russia and Japan regarding the same. Thus international friction in Manchuria will be obviated and the welfare of all nations promoted in Asia.

DE MARGERIE.

The French Minister to the Wai Wu-pu.
February 18, 1910.

Your Excellency:

The Government of the French Republic, with the idea that it is in the interest of China to avoid everything which

may occasion complications or difficulties in the extreme Orient, and to maintain harmonious relations among the powers now having interests in Asia, desires to recommend to the Imperial Chinese Government not to conclude an arrangement on the subject of the railway line between Chinchou and Aigun without previously having come to an agreement with the Russian Government and the Japanese Government.

DE MARGERIE.

The Japanese Minister to the Wai Wu-pu.
February 14, 1910.

Your Excellency:

The Imperial Government of Japan looks upon the construction of the Chinchou-Aigun Railway as a matter of great importance in its effect upon the prosperity of the South Manchurian Railway. Yet the Chinese Government has for its aim in constructing this railway the development of Manchuria and Mongolia. The Japanese Government takes this into consideration and makes the following propositions with a view to assisting in the construction of the road.

1. Japan will participate in the construction of the Chinchou-Aigun Railway by sharing in the loan, furnishing engineers and railway materials, and participating in the construction work. The rules under which such participation shall take place will be amicably arranged with the powers concerned.

2. In order to connect the Chinchou-Aigun Railway with the South Manchurian Railway, China will construct a branch line from some station on the Chinchou-Aigun Railway toward the southeast to some station on the South Manchurian Railway. The location of said line and the point at which it shall connect with the South Manchurian Railway must be settled by amicable discussion with the Japanese Government.

It will be observed that the Japanese Government overlooks the important consequences to the South Manchurian Railway which will be caused by the construction of the Chinchou-Aigun Railway, but certainly the reason for assisting in the construction of the Chinchou-Aigun Railway is because the projected line of the railway, starting from Chinchou and passing through Taonan-fu, is at a great distance from the South Manchurian Railway. If the proposed location of the railway is to be materially changed, the Japanese Government will have a concern in this and will expect to be consulted.

IJUN.

Japan thus does not officially oppose the construction of the Chinchou-Aigun Railway, however taking care to assert her right to be consulted as to its location; but she insists upon participation, and upon terms which are impossible for China to accept without stultifying herself—which is equivalent to obstruction. This proposal by Japan to assist in financing the new line and in providing materials illuminates her *bona fides* in advancing the suggestion; for the Japanese

Government is letting its railways in Japan run down for lack of money, has borrowed abroad, partly in America, the funds to rebuild and equip her South Manchurian Railway, is soon going to try to float another foreign loan for further improvements; and no railway materials of consequence are made in Japan. Nothing is more certain than if Japan should get the right to participate in financing this road she would have to borrow her share to lend it in turn to China, and that her share of supplying railway materials would be merely to act as agent for the purpose of exacting a commission.

Next followed the Russian counter-proposal.

The Russian Minister to the Wai Wu-pu.
March 4, 1910.

Your Excellency:

The Wai Wu-pu formerly asked the Russian Minister verbally for the views of the Russian Government on the project of China to construct a railway from Chinchou to Aigun. The Russian Minister notified the Russian Foreign Office so that it might take it into consideration. A telegram has been received directing the Russian Minister to state that the Russian Government, having carefully considered the proposal of China to build a railway from Chinchou to Aigun, has concluded that it would result in serious injury both to the Russian frontier defenses and to her commercial interests.

In the 25th year of Kuang Hsu (1899) the Chinese Government declared that in constructing all railways northward from Peking capital would be borrowed from no other country than Russia. The Russian Government would not be disposed to insist upon China complying with her former promise in this matter of her borrowing capital for the construction of railways if Russia's frontier defenses and profits in respect to the Manchurian Railways were not affected. The Russian railway experts have reported that the Chinchou-Aigun Railway cannot fail to take from the Russian Manchurian Railway profits on transportation to the amount of 5,000,000 rubles annually, and will ruin the property which China has a right to regain after a period of 29 years, or which will revert to China free of cost after a period of 73 years.

The Russian Government is of the opinion that the capitalists concerned in this enterprise have no other object in making the loan than the obtaining of profit and that they have no political aims. If therefore the railway which it is proposed to build from Chinchou to Aigun should be constructed elsewhere, the commercial advantages would be equally great, while Russia would suffer no injury. The foreign capitalists should have no objection to this. In view of the above considerations, the Russian Government now proposes to the Chinese Government that instead of building a railway from Chinchou to Aigun it build a line connecting with the Peking-Mukden Rail-

way from Kalgan to Urga and thence northward to Kiakta on the Russian border. It is understood that China has long had an intention to build this railway, so that China and the foreign nations would be of one mind about this. The difficulty of China which has caused her to hesitate up to the present is that since this railway would not connect with the trans-Siberian Railway it could not be very profitable. The Russian Government would not be averse to establishing such a connection, and would be willing to build a branch road from a station on the railway in the Province of Trans-Baikalia to Kiakta. But in the event of China's building this Kalgan-Kiakta railway she should allow Russian capitalists to be responsible for building the section from Urga to Kiakta.

The Russian Government greatly hopes that the Chinese Government will see clearly in this proposal the mutual advantages which would accrue to both countries.

The Russian Government would gladly accede to the wish of the Chinese Government to build a railway in Manchuria with borrowed capital if it did not affect Russia's frontier defenses and the profits of her Manchurian Railways. Therefore Russia now brings forward this proposal and trusts that the Chinese Government will show a friendly spirit in helping to carry it out. The American and other Governments concerned have already been notified of the views of Russia.

A necessary despatch, etc.

KOROSTOVETZ.

This memorandum was immediately supported by the French Government.

The French Minister to the Wai Wu-pu.
March 4, 1910.]

Your Excellency:

The Government of the French Republic, desiring to get settled the question of the railways in the north of China originally brought up by the proposal of the *Government of the United States* in connection with the construction of a railway between Chinchou and Aigun, by way of Tsitsihar, believes, however, as it has already made known to the Chinese Government, that this project (Chinchou-Aigun) cannot be realized without the risk of raising certain complications, unless by agreement with the *governments principally interested, notably Russia*; now convinced, besides, of the unfavorable consequences to Russia which the projected railway may have in relation to her northern frontier and the commercial interests of the Manchurian Railway, the French Government thinks, with the Imperial Government of Russia, that the interests of the financiers who have proposed to China with a purely commercial object a loan for the construction of the Chinchou-Aigun line will be fully satisfied if the Chinese Government should construct, with the aid of the same financiers, the prolongation of the Kalgan Railway toward Urga and Kiakta.

The Government of the French Republic is convinced that this line, the construction of which in an important Chinese region would not give rise to any political question, and, besides, having been fully considered, would likewise offer serious advantages to China.

It [The French Government] would consequently see with particular satisfaction the Imperial Chinese Government accept the propositions which have been submitted in this connection by the Imperial Russian Government.

DE MARGERIE

This concludes written representations made to the Chinese Government up to this writing in regard to this question. The Chinese Government has made so far no replies except to acknowledge their receipt; but H. E. Liang Tun-yen has verbally told ministers of several powers that China cannot concede that she should consult any foreign nation about the development of railways within her boundaries.

It is interesting to note that in the phraseology of the Russian counter-proposal suggesting a Kalgan-Kiakta line there is a reversion to customary diplomatic courtesy, and the dictatorial tone employed in previous communications is not used in this. Russia "trusts that the Chinese Government" will do so and so, and insists that China "should allow" Russian capitalists to construct the section from Urga to Kiakta, about 150 miles, thus holding China off from her border. "Must" and "shall" are not used so freely. Another point can be noticed. In previous representations the Russian Minister had explicitly denominated the American Government as going to build the Chinchou-Aigun Railway. I mention this merely to show that a calculated effort is being made to create an impression here that the Chinchou-Aigun Railway is an American political scheme to encroach upon China. In the communication of the French Minister this insinuation is maintained—"proposal of the Government of the United States" and "financiers who have proposed to China" being expressions used in alluding to the origin of this project. The French and Russian Governments know perfectly well that the United States Government never has built and does not now own or operate a single mile of railway in the world, even within its own territories, and that it has no thought of engaging in the railway business in foreign countries. It is impossible to think that the phraseology used in these official notes is inadvertent. The Chinchou-Aigun project originated with China, and was talked of for years before American participation was thought of.

But why should France, assuming to decide what is better for American financiers, break into this question? It reasonably may be assumed that one reason is that she does not wish to see the strategical position of her ally, Russia, weakened in the north; or she may have acted solely at the request of Russia.

A phrase used in the French note has, however, a somewhat wider significance, and brings out an interesting suggestion. I mean the reference to the relation of Russia's northern frontier to the Chinchou-Aigun railway. This broaches a very important matter for China, and provides a clue to the solidarity of Russia, Japan, France and England in this question. These powers all have territorial possessions bordering upon China and connected with her domain by railways crossing a land frontier. The phraseology of the diplomatic representations in this instance leaves no room for doubt that a concerted effort is being made to establish a precedent that China will not be permitted to build railways toward her land borders except with the permission of foreign nations, which reserve to themselves to decide how and where such railways, if permitted at all, must be laid. It is clear that if this condition is established China never can be able, except at great disadvantage, to defend her territories from invasion.

Although Japan and Russia have in effect acted together in this question of railway development in Manchuria, it is not because of friendship between the two nations, nor yet on account of real community of interest. In fact, Russia and Japan are driven together in this matter because of hostility and fear of each other. An analysis of the strategical situation in eastern Asia clearly demonstrates this. Japan now owns and controls railways entering Manchuria and penetrating toward her point of contact with Russian influence as follows: Through Korea and via the Mukden-Antung Railway to central Manchuria; from Port Arthur, Dalny and Newchwang via the South Manchurian Railway north as far as Kuangchentze. The engineering difficulties presented in constructing the Mukden-Antung Railway and the character of the country through which it passes indicate that it perhaps never can be operated profitably, intimating that it is built now for purely strategical reasons. Then Japan has secured from China the right to build a road from Kirin eastward to Hunchun, near the mouth of the Tumen river, a short distance from Vladivostok. A road from Gensan, on the east coast of Korea, proceeding northeast to the Yalu, with a connection with the Korean railway at Anju, has been projected and authorized; and a railway connecting the proposed naval base in North Korea with Hunchun has quietly been surveyed. When these railways are finished, which probably will be within three years, Japan can throw troops into Manchuria and to the borders of the Ussuri littoral over several routes. Thus she is firmly entrenching herself in Manchuria and Korea.

Against this Russia has her part of the Chinese Eastern Railway, with the stub to Kuangchentze. It will be several years before the Amur Railway is finished. It should be noted that in Japan's representations stating her attitude toward the Chinchou-Aigun Railway, she only will

assent to its construction provided it is connected with the South Manchurian Railway. The reason is that this road would cross the Russian railway near Tsitsihar, which would make it a strategical vantage for Russia, and enable her quickly to move troops southward; while unless Japanese roads connect with it Japan would have no effective means of quickly countering such a movement. On the other hand, if this road is connected with the South Manchurian Railway, it will give Japan one more avenue to reach Russia's flank and rear. Japan so far has not intimated her attitude to Russia's counter-proposal to build a road from Kalgan to Kiakta, but there is hardly any doubt that if such a project takes practical shape (of which there is no present prospect) she would find that her strategical position would thereby be weakened, and object. Commercially, there is ample room for both these proposed railways, and both should be built in China's interest.

Perhaps it is not necessary to say more to demonstrate that rejection of the neutralization proposal and objections to the Chinchou-Aigun Railway are entirely lacking in regard for China's interests, and to plain provisions of the Portsmouth treaty; but owing to their having been brought into the discussion some other phases may be mentioned. These chiefly refer to the attitude of England. Replying to questions in parliament, the British Government has explained that its action in insisting that China should consult Russia and Japan about railway development in Manchuria is based upon the almost forgotten Scott-Mouravieff note exchanged by England and Russia in 1899, and when these nations mutually agreed not to attempt railway exploitation north of the Great Wall and in the Yiangtse valley respectively. In this connection it is interesting to recall that only a few months ago Russia made formal request to be admitted to participation in the Hukuang loan, showing that she then regarded the Scott-Mouravieff understanding as a dead letter. England now publicly drags it forward as a binding instrument upon her; but admitting that she may place her own construction upon it, how is it possible to deduce that a mutual understanding between England and Russia can affect China's rights or the rights of other nations? It is very significant indeed how all the old addenda of "sphere of influence" times are being dug up, dusted and adjusted to the present situation. At any rate, we now may learn where England stands. Compared to what Americans thought they might expect from England in the East, her recent conduct savors of duplicity. It now is felt here that England will not permit the Hukuang loan to be consummated if she can prevent it, having decided to revive the "sphere of influence" doctrine, and if possible keep other nations out of the Yiangtse valley. One cannot doubt that British statesmen have resolved to sacrifice British interests in the north rather than see the strategical

position of her ally there weakened. And so, weighing advantages and disadvantages as she now sees them in the light of her broader imperial interests, England has sided in this matter with the predatory powers in China. We may be sure that England has not thrown over a large British interest and brought her quota of pressure to bear upon China without a *quid pro quo*, and we logically can surmise this to be that if similar issues arise in the Yiangtse valley—as, for instance, the Hukuang loan—Russia, Japan and France will advise China that she must not proceed without consulting England. The present impasse could not have been reached without the assent of England. We have been thinking that the interests of England and America in China are sympathetic; but evidently the present British ministry takes an opposite view.

Germany was pressed by some nations to address China in regard to the Chinchou-Aigun Railway in similar terms to those used by Japan, Russia, France and England; but she declined to do so.

To recapitulate, we find that the following issues affecting the sovereignty of China and the open door principle within her territory have been sharply defined:

1. The right of China to decide upon the course of railway development within her territory is denied by certain foreign nations.
2. Certain foreign nations have declared that their strategical and political interests must be considered as paramount in planning a railway system within China's territory.
3. Certain foreign nations have asserted the right to decide who will finance, construct and operate railways within China's territory; and to veto arrangements in regard to these matters which China has made and wishes to carry out.

In respect to the United States, this issue has been raised:

Foreign nations have asserted the right to interfere in business transactions between American citizens and the Chinese Government, in express violation of treaties between the United States and China, and of numerous solemn covenants of those governments with China and the United States; a doctrine which is susceptible to world-wide application.

In the time pending decision of these issues there will be an immense amount of representation designed to obscure what is involved, and one can foresee that much propaganda will attempt to demonstrate to the American people that their interests are not materially affected by questions thus mooted. These arguments can be classed under the following heads: that American trade and commercial opportunity in China are not worth running a risk of war to protect them; and that American commercial and financial interests and opportunities in China are not threatened by conditions which will arise if the present *status quo* becomes established. In China and throughout the world all the influences which can

be employed by the international combination which has been effected in this matter will subtly and openly be used to attempt to demonstrate that America is seeking to exploit China for selfish and sinister designs, and in the interest of an American plutocracy; that she is unduly interfering where she has no adequate rights; that Americans are bent upon monopolizing the trade and development of the Far East to the exclusion of other foreign interests. Already the foreign press of the East, among which American interests have no representation, is carping in this vein; and one catches even at this distance its echoes in America and Europe. Furthermore, it seems that even the enlightened press in America is still obsessed with the idea that nothing is involved in this question except trade interests in Manchuria.

I would contradict this idea with all the force I can command. Our trade interests in Manchuria are considerable, have already been injured by conditions due to Russian and Japanese occupation, and may be further impaired by a continuation of it. Our trade with China is large, and certain to grow if not too badly handicapped. The United States is turning the corner from a borrowing to a lending nation, and within fifty years it will have more money to lend than any other two nations if present rates of national progress are maintained. China offers one of the greatest fields for this investment; and to-day China once more tentatively is being carved into "spheres" dominated by foreign powers that are commercial competitors of our nation, and doctrines are being openly asserted which logically will, if conceded or anyhow established, apply to all parts of the Empire, and to all forms of commerce and finance. Notwithstanding this, it might be argued that our interests and prospects here are not worth going to war about, if it should come to that. But the principle that any nation or nations can from consideration of their selfish interests be permitted directly to interpose between the United States and another friendly nation, and assume to decide what their relations shall be, cannot be granted nor yielded, except to force. I unhesitatingly declare my opinion that the issue raised in the matter of the Chinchou-Aigun Railway, broadly viewed, is one which any self-respecting nation, if forced by antagonistic diplomacy into a position where it is squarely put, ought to go to war about.

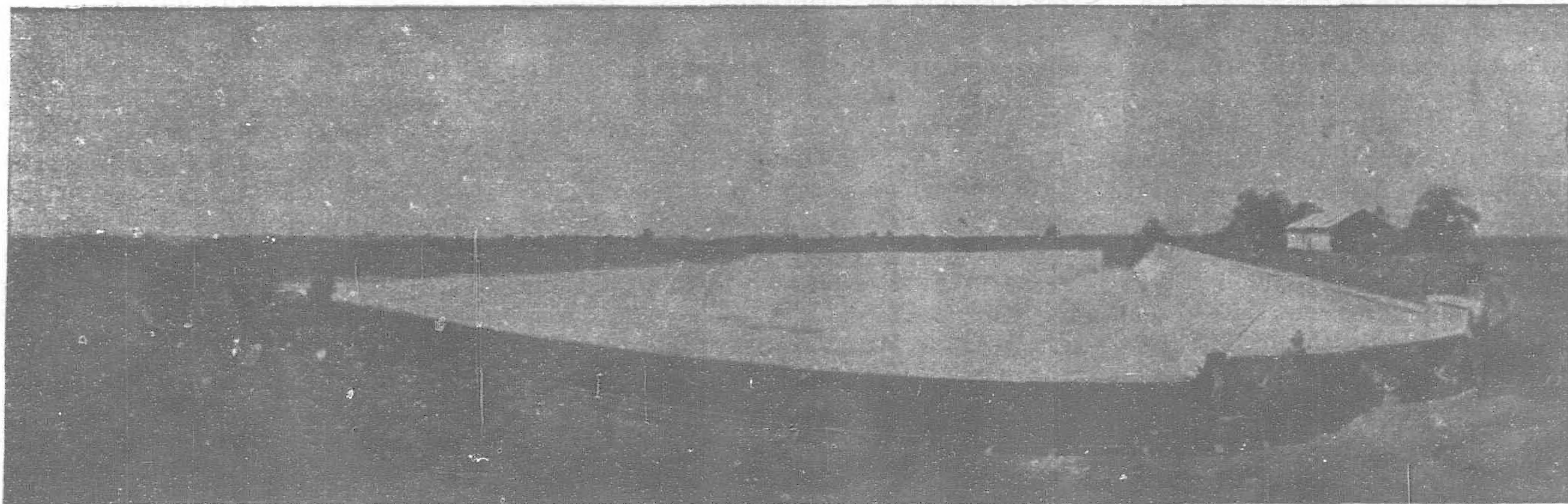
Americans will do well to take this question seriously. The Far Eastern situation already has modified our relations with Japan, and it appears from recent events that it will affect our attitude toward other nations, including England; perhaps may estrange us from her. If this occurs, we shall be compelled to consider whether the possession by England of her present naval superiority over us is compatible with our legitimate national aspirations and growth. We now safely may conclude that international assurances concerning the integrity of China and the open door are, in the case of several

(*) MANILA WATERWORKS AND SEWER CONSTRUCTION

The Department was organized in March, 1905, by virtue of Act 1323 of the Philippine Commission, with the undersigned as Chief Engineer. Previous to this date preliminary studies had been made of the water system by the undersigned, and of the sewer system by Mr. O. L. Ingalls. From these studies plans were prepared, and in February, 1904, Mr.

Department, the undersigned proceeded with the preparation of the final plans and specifications. Proposals for the construction of the water system were invited on July 20th, 1905, and for the sewer system on January 12th, 1906; and contracts were awarded as follows: Water System:—For the dam and reservoir to the Matson, Lord & Belser Co.

screen, all fish, trash, etc., will be removed. Passing the screens, the water enters a riveted steel pipe 42 inches in diameter, approximately 10½ miles long. The first 900 feet is laid through a tunnel in the cliff forming the south side of the gorge, but from there on it was all laid in open trench. For the first three miles the pipe follows the river closely but on reaching the



GENERAL VIEW OF NEW RESERVOIR AT SAN JUAN DEL MONTE CONSTRUCTED BY THE MANILA CONSTRUCTION CO.

Desmond Fitzgerald, Past President of the American Society of Civil Engineers, examined the plans as Consulting Engineer. He approved the design for the water system in its entirety. In the sewer system plans he advised eliminating the proposed pumping station at Calle Herran, since the movement of the currents in the bay were likely to carry the sewage into the new harbor area. When this and some other minor changes were incorporated, he approved the sewer plans also.

Immediately after the formation of the

**Final report of Major J. F. Case, Chief Engineer, Department of Sewer and Waterworks Construction.*

powers, purely perfunctory expressions; indeed, mention of the Portsmouth treaty in this connection causes diplomats in Peking and Tokyo to smile and make allusions to "amateur diplomacy." In respect to the railway negotiations a deadlock has been reached, with the next move up to the United States. The wall which Japanese diplomacy began to build around the Taft policy in China eighteen months ago—of which the Manchurian agreements, the Ito-Kokovsoff meeting, the Crane incident and the recall and resignation of Consul Cloud were passing evidences—has been completed, and must be breached before our government can proceed. China is helpless. She has had ample experience of what Russia and Japan will do to enforce their policies in Asia, and she is very uncertain about how far the United States will go to promote hers. War can be averted; but for this we must put dependence in a counter-play of opposing selfish interests rather than in just principles and moral suasion. This is an ugly fact, but it should be squarely recognized.

It often is said that there can be no peace without justice. There can be no secure peace in the Far East without justice to China.

For the steel pipe line and tunnel conduit, to the Atlantic, Gulf & Pacific Co.

For furnishing steel plates and rivets, to H. W. Peabody & Co.

Sewer System:—For the entire work, to the Atlantic, Gulf & Pacific Co.

Construction work was promptly started by all contractors. The Matson, Lord & Belser Co. sublet the construction of the dam to Mr. Salvadore Farre, and the reservoir to the Manila Construction Company. All other work was carried on by the contractors themselves. A road along the pipe line and conduit was built by administration, the work being necessary before any contracts could be let.

Briefly stated, the water system consists of an impounding and diversion dam constructed at a gorge in the Mariquina River Valley whose elevation is sufficient to supply the City of Manila by gravity. This reservoir contains approximately five hundred million gallons of water in storage, which is sufficient to tide the city over a possible dry season when the yield of the stream itself might be deficient. The elevation of the top of this dam is 214 feet above city datum. This dam is constructed of cyclopean masonry or concrete in which large stones are imbedded, all faced with cut limestone from the adjacent mountains. It is a gravity section; that is, of weight and strength sufficient to resist any water pressure to which it might be subjected. In addition, it is arched against the water pressure as a further precaution against earthquakes or other disturbance. At both ends it is built into the solid rock. It was anticipated that this dam could be founded on solid rock throughout its entire length, but for a short distance in the bed of the stream the ledge was lacking and it was necessary to place the foundations on heavy boulders imbedded in clay, which experience proved to be impervious. The bed of the stream is approximately elevation 178, and the lowest point of the masonry is at approximately 142.

A sluiceway five feet square in section is provided through the dam, and a 36-inch cast iron wasteway will remove any possible sediment from directly under the intake. The water may be drawn from four different elevations into the inlet well. From this well it is controlled by four sluiceways, 20 by 24 inches each. After passing these gates it enters the screen chamber where, by means of a rotary broad Mariquina Valley it follows a straight

line a distance of more than 12 miles to the reservoir. Under the Mariquina River a 36-inch cast iron pipe is substituted for the steel pipe. On reaching the high grounds on the west side of the River, the pipe gives place to the masonry-lined tunnel conduit. Steel plates and rivets were furnished under contract to H. W. Peabody & Co., and the pipe was manufactured at the shops, built for the purpose, to the Atlantic, Gulf & Pacific Co. It was built in sections of six courses, approximately 10 feet long each, or 36 feet per section. From the shops these sections were transported by rail and wagon to the site of the trench where they were riveted together by hand. A suitable number of air valves and blow-offs were provided, and one standpipe.

After riveting the pipe, and before covering it, it was pumped full of water and subjected to not less than 75 pounds hydraulic pressure. Any leaks developing under this pressure were then recaulked and the line made satisfactorily tight. On completion of the pipe line a bull head was placed in its lower end, and the pipe was filled with water from the headworks and placed under its entire hydrostatic head, thereby being far in excess of any future requirements. Careful measurements of the leakage under these conditions were made, and the result was gratifying proof of the excellence of the work.

The tunnel and conduit is a masonry-lined horseshoe section with a vertical diameter of approximately five feet. It has masonry-lined inclined shafts for points of entrance placed at about one-half mile intervals. Considerable difficulty was encountered in driving this tunnel on account of the excessive amount of ground water encountered, but it was successfully completed. The water discharges from the conduit into the distributing reservoir on the hills of San Juan del Monte. This reservoir has a capacity of approximately 50,000,000 gallons, is masonry-lined throughout, and provided with controlling and discharge gates. One feature of its construction is that the conduit may be used as a bye-pass so that the reservoir may be emptied and cleaned without interrupting the supply of water to the city.

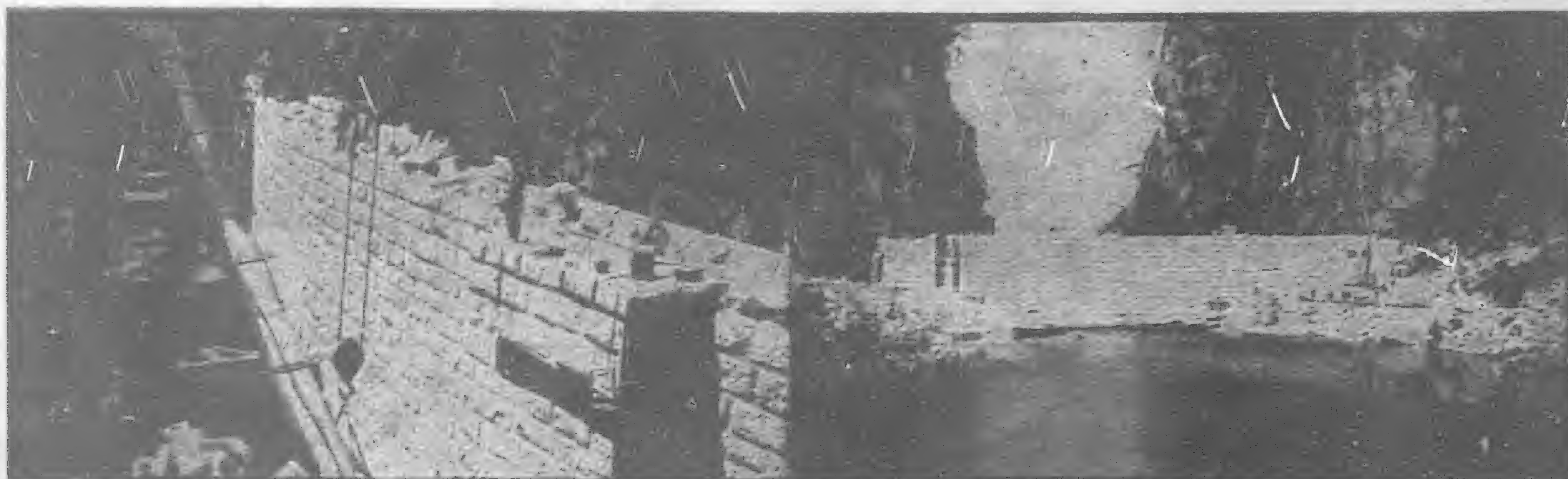


VIEW SHOWING RUBBLE OR CYCLOPEAN MASONRY.

From the distributing reservoir the water is conducted to the old Deposito through a continuation of the 42-inch steel-riveted pipe. Connection is made with the old Deposito, which is kept filled with water as an additional storage

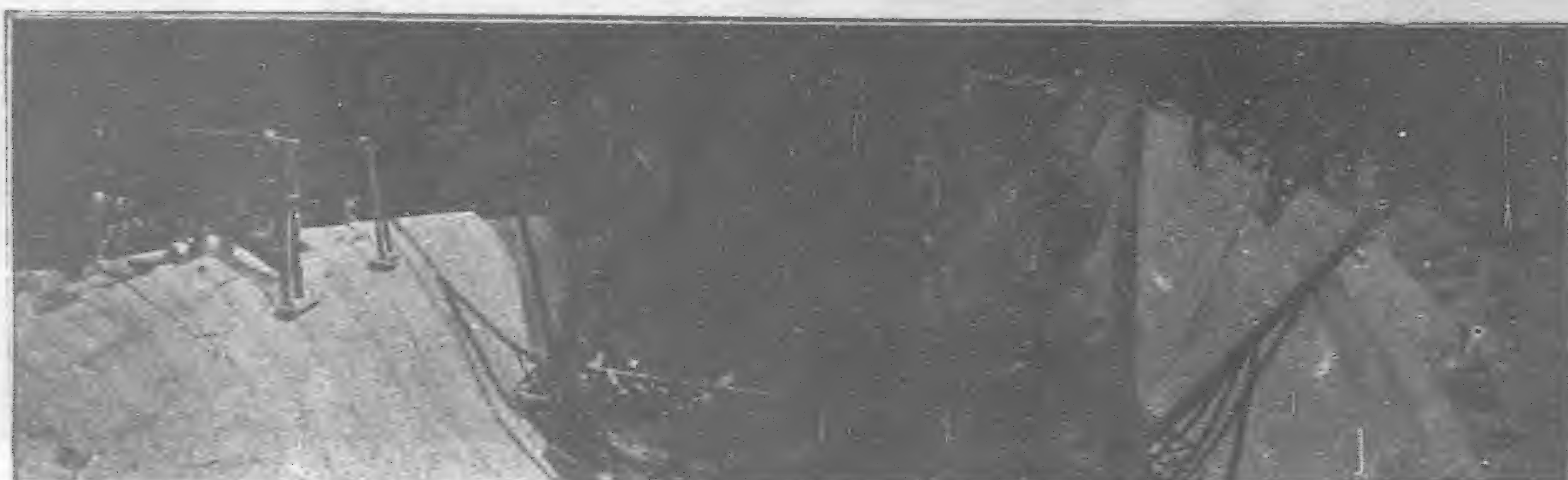
supply in case of necessity. In consequence, there is at all times some 68,000,000 gallons of water available for city consumption. From the Deposito the distribution system proper begins. All pipes are of cast iron ranging in

size from 42 inches to 4 inches in internal diameter. All parts of the city will be supplied. When the pipes are installed the system will afford a minimum pressure of 20 pounds at the street level in the most distant parts of the



CURVE ON WHICH DAM IS BUILT.

GENERAL VIEW LOOKING DOWN STREAM. DURING CONSTRUCTION.



VIEW OF SPILLWAY DURING CONSTRUCTION SHOWING METHOD OF PLACING CUT STONE FACING



GENERAL VIEW DURING CONSTRUCTION SHOWING 5'X5' SLUICWAY ON EXTREME RIGHT

SAMPLE OF CUT STONE ARCHES OVER DOOR IN GATE HOUSE.



VIEW OF INTAKE SHOWING TWO DIFFERENT ELEVATIONS AT WHICH WATER MAY BE DRAWN OFF.

VIEW SHOWING STEEL FRAME WORK FOR OPERATING GATES AT INTAKE AND FOR REVOLVING SCREEN TO REMOVE WASTE, FISH, ETC.

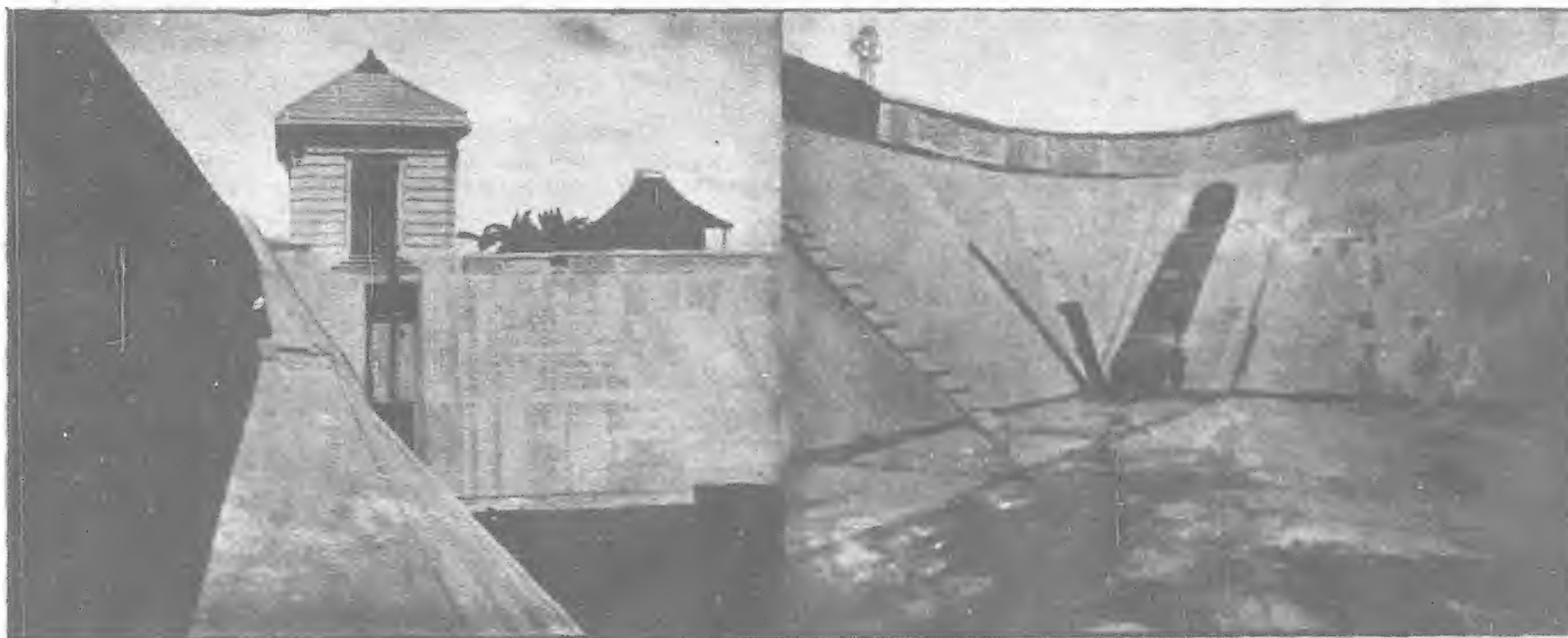
city under maximum consumption. In the design full use was made of the old distributing pipes, but these have been augmented and replaced as a careful study of the conditions showed necessary. The new gravity water supply will furnish 22,500,000 gallons of water daily to the city, sufficient for practically double the present population.

Because of the difficulties attendant upon the construction of the dam, and by reason of the outbreak of cholera in the fall of 1908 as well as for economy, a temporary intake was built above the dam and the use of the new water supply inaugurated on November 12, 1908. Since that date there has been no interruption of

reservoir is in service and the water drawn from the depth above mentioned, at which depth our observations indicate amoeba will be absent and the evil effects of shallow flowage be eliminated. It should be noticed, however, that in planning the gravity supply, provision was made for the purification plant. The necessary head for slow sand filters is arranged for, the site selected and should experience show it to be necessary, the plant may be installed without loss or damage to any of the works constructed. Drawings and estimates are already prepared for covering the present reservoir, although since, as stated above, the water bacteriologically is unob-

jectionable, I do not consider that the reservoir needs to be covered.

My own recommendation, in case purification is found essential, is that three sand filters be installed, each of three quarters of an acre in area. Dosing the water with hypochlorite of lime and alum will allow these filters to work at the rate of 10,000,000 gallons per day per acre with an effluent practically pure. The location for these filters is just beyond the new reservoir, and they can be installed for not to exceed half million pesos. This question should, however, be left in abeyance until the new system has completed service during the dry season under favorable conditions.



VIEW OF GATE HOUSE AND INTAKE AT SAN JUAN RESERVOIR.

the new supply. This intake, although it has given good service, is not entirely satisfactory as the water is taken from a pool of the river itself, and is subject to all of the objections which pertain to shallow flowage water. It contains organic matter such as algae and water mosses as well as certain forms of animal life, tiny fish, or fish eggs, and once received in the reservoir these propagate. In spite of the screens some of this objectionable matter gets into the pipes, and there have been difficulty with meters and complaints from water consumers. However, as soon as the water is drawn from the storage reservoir and taken from a depth of 25 or 30 feet, it is believed that practically all of this trouble will be avoided.

This, however, brings up the question of ultimate purification. Mr. Fitzgerald, Consulting Engineer, recommended a purification plant to be installed as an adjunct to the water supply, but, after considering all the data presented, he agreed with my own recommendation that this should be deferred until a satisfactory method of removing amoeba from the water had been discovered. Practically all surface waters in the Philippines contain amoeba, and the long series of experiments carried out under my direction proves conclusively that slow sand filtration will not remove the amoeba. The bacterial count of the raw water supplied by the new system is low, and the water itself from that standpoint is satisfactory. The watershed itself is practically free from human inhabitants and is, in consequence, uncontaminated. Any method of purification needs, therefore, to remove amoeba before it can be considered entirely satisfactory. Sanitary science in the treatment and purification of water is advancing with rapid strides, but so far only by chemical treatment or ozone can the amoeba be removed. Copper sulphate has been tried, but not with entire success. At the present time hypochlorite of lime seems to promise excellent results. Ozone treatment is too expensive.

I recommend, therefore, that no action towards purification be taken until the storage



INTAKE SHOWING DIFFERENT ELEVATION AT WHICH WATER MAY BE DRAWN. PLACING THE KEYSTONE ON SPILLWAY.

In the operation of the new system the following suggestions are offered, which must be followed if satisfactory service is to be rendered.

Whenever because of rains and the consequent rise of the river the turbidity becomes objectionable, the gates at the dam should be closed and the water for the city supply drawn from the reservoir during the continuance of this turbidity.

While the gates are closed the sluiceway through the dam as well as the 36-inch discharge pipe should be opened; and they should remain fully or partially open during the rainy season so as to allow the sediment to be flushed out.

Every year about the close of the rainy season when the stage of the river is about six feet, the water should be drawn down and workmen employed to sluice out the sand, gravel, etc., which will most certainly be deposited as the result of every flood. During the sluicing operations the gates to the city should be closed. In this way and at small expense the storage reservoir may be conserved and cleaned, while if it is neglected its capacity will be reduced and its efficiency diminished.

The pipe line should be emptied at least once a year and examined throughout. This should be done in sections so far as possible so as not to change interrupting the city supply. In emptying and filling the pipe special care must be taken to see that the air valves work properly.

At various points on the line the pipe is carried over streams or bridges, and the pipe must be examined at those points frequently to prevent oxidation where exposed to the air or only slightly covered with earth.

From time to time an examination of the pipes should be made in the rice fields near San Mateo, for it is possible that the chemicals contained in the earth may destroy the coating; and since the life of steel pipe is determined by the existence of the coating, damage thereto must be guarded against.

The tunnel and conduit need no care except a possible occasional cleaning. This can easily be done by laborers using ordinary brooms or stiff brushes, though a rotary machine patterned after that in use in Boston may be used to advantage.

The reservoir itself should be cleaned at least once a year and the time selected when the water at the dam is clear and abundant. It is probable that the beginning of the rainy season in June is the best time.

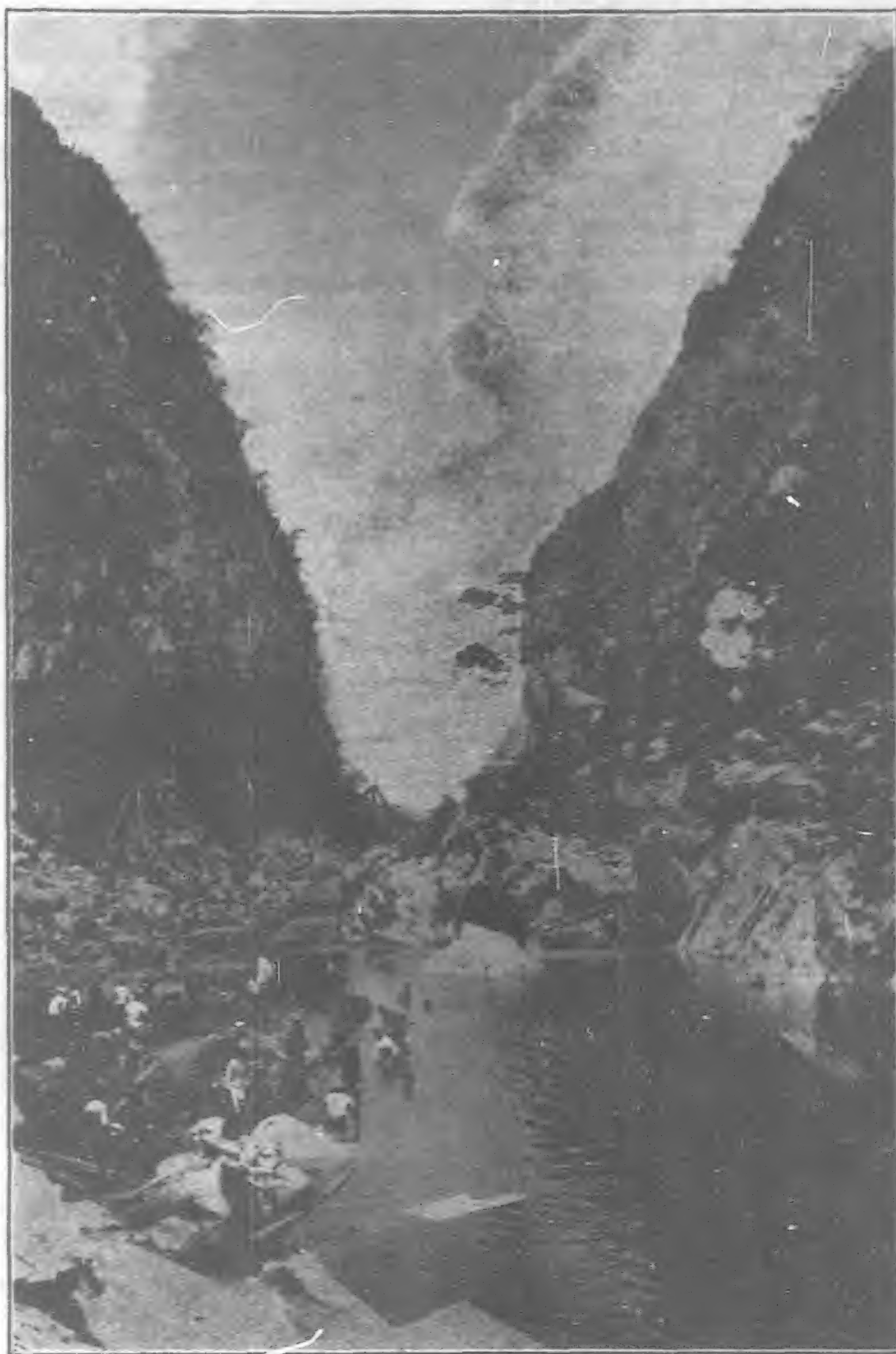
All air valves and blow-offs should be tested from time to time, and the blow-offs especially should be opened for a few minutes and any sediment blown out at frequent intervals.

Sewer System.—The sewer system comprises more than fifty-two miles of main sewer and laterals ranging in size from 8 inches to 72 inches in diameter. The principle governing the design was that all sewers should start at their upper ends as near the surface of the ground as was possible, that the grade necessary for flow should be obtained by deepening the trenches, and that sewer pumping stations should be installed at intervals determined by the economical limit of excavated depth. This design, therefore, called for five substations in which the sewage was lifted from a lower to a higher level, and one main station at the foot of Calle Azcarraga, in which all sewage of the city is collected and from there pumped out to sea to such a distance as to avoid any possibility of offense.

All sewers 24 inches or less in diameter are constructed of vitrified pipe, and all above 24 inches in diameter are of concrete. It was intended to line the inverts of the larger sewers with brick, but because of the unsatisfactory quality obtainable concrete was substituted. This substitution is entirely satisfactory and has resulted in considerable economy. I need hardly refer to the difficulties of construction encountered. The narrow streets and the existence of ground water in practically every trench, as well as the beds of quicksand encountered in various places, made the construction difficult and expensive. There was also grave danger of disturbing the foundations of buildings; and the completion of this work without an accident of importance is cause for congratulation. Two instances are particularly noticeable: On Calle Cabildo, in the Walled City,

it was necessary to go far below the foundations of the Cathedral, and the timbering and bracing of this trench involved the support of the solid stone walls thereof, fifty feet in height. No sign of crack in this wall developed as a result of this operation. In Calle Tanduay a bed of

quicksand was encountered which was well nigh impassable. The contractors worked seven months to install 140 feet of pipe. In spite of all these difficulties, I desire particularly to call attention to the tightness of the sewer system. The actual infiltration of ground waters



SITE OF THE NEW DAM AT MONTALBON BEFORE WORK BEGAN.



STEEL WORKS OF THE ATLANTIC, GULF AND PACIFIC COMPANY ON THE PASIG RIVER AT MANILA.

into the entire sewer system is trifling and does not amount to ten per cent of what reasonably might have been expected. The whole district of Sampaloc was absolutely tight.

Tanduay, on account of the quicksand encountered, gave some trouble; and because of settlement shortly after the completion of the system, certain of the joints were opened and the leakage became considerable. These leaks were, however, caulked on the inside and made tight at small expense, which was borne by the contractors.

the sewage in the collecting chamber has been discharged, the float mechanism also shuts off the power. The smallest substation is at Paco and the largest at Santa Cruz. It should be noticed that sewage from Paco is pumped four times before it is finally disposed of.

All of the substations have operated satisfactorily since installation, but the main station gave considerable trouble for several months because it was not properly balanced. This balance can only be determined by observation during operation and unfortunately the con-

pumps and motors are now operating perfectly and the entire system is a notable example of excellent construction.

Some difficulty has occurred at the main station and the Malate substation because of offensive odors escaping from the sewers. This is caused by the disposal stations of the pail system placed in the immediate neighborhood. The concentrated mass of sewage from the pails injected into the sewers without proper dilution is not only difficult for the pumps to handle, but by its mere presence generates a considerable amount of offensive gases. Under certain conditions of wind and atmosphere these odors have been noticeable in the surrounding neighborhood, and have at times constituted a veritable nuisance. A ventilating stack has been placed on the Malate station, and it is believed that there will be no further cause of complaint. Should there be further complaint, however, it may be rectified by increasing the length of the stack. Charcoal fires have been used in the ventilators; for the most part, with entire success. Though absolute adjustment may take some little time, I wish to emphasize the fact that there should be nothing objectionable or offensive about the pumping stations.

In May, 1909, the Department was authorized by the Municipal Board to proceed with the operation of the sewer system, including installation of street connections. At the present time some seven hundred connections have been made, and the applications are averaging sixty or more per month. The services of the sanity barge PLUTO have been dispensed with, all pails are emptied directly into the sewer system. Sewage and ground water combined amount to less than 2,000,000 gallons in 24 hours, and since the main pumps have a capacity of approximately 1,000,000 gallons per hour, the time necessary for operation is less than two hours daily. It might be supposed then that the pumps should have been designed for much less capacity, and this is partially true. The reason, however, has already been stated in the remarkable water-tight construction and the consequent small amount of ground water infiltration. Furthermore, there should be more than six thousand sewer connections in the city at present.

Certain of the districts of the city are yet to be supplied with a sewer system. The most important ones are the new filled area of harbor work and the districts of Pandacan and Santa Ana. None of these districts can be taken care of without installing additional pumping stations, and since the cost of these and the operating expense thereof are out of proportion to the benefits obtainable, I strongly recommend that all sewage in these districts be discharged for the present into the stormwater drains. The requirements of the Board of Health are such that this will involve the use of septic vaults, but these may be of simple construction and of relatively small expense. Whenever the development of these districts reaches a point where this proposed method is unsatisfactory, it will be necessary to install a sanitary sewer system and provide pumping stations. Within the districts already taken care of, numerous extensions from time to time will be necessary to keep pace with the development of city construction. These extensions should be taken care of by the office of Water Supply and Sewers, by direction of the Municipal Board, whenever it is convinced that they are needed.

The Department was also charged with the care of storm water, and a system of drains has been designed which covers the entire city. This involved the fixing of grades and the determination of the limits of drainage districts. In this design all existing esteros, the river and the bay were used. There still remains a large amount of work to be done in this direction before the city can be considered sanitary. Manila is low and flat. Many sections must be filled to bring the ground above the level of high tide. A necessary adjunct of this is the improvement of the esteros, and it is to be hoped that funds will be obtained shortly to undertake this work. Some years ago the undersigned prepared a preliminary plan for this work and estimated the cost thereof.



INTERIOR MAIN PUMPING STATION, MANILA SEWAGE SYSTEM.—ELECTRICAL INSTALLATION FURNISHED BY GENERAL ELECTRIC CO. AND INSTALLED BY FRANK L. STRONG.

The machinery for the pumping stations was furnished and installed by Frank L. Strong, contractor, while the buildings therefor were constructed by Atlantic, Gulf & Pacific Company. All pumps are centrifugal and driven by electric motors. The main station is direct connected; that is, the shaft of motor and pump is continuous, while the substations are geared since the speed of the motors is far in excess of the speed of the pumps. The gears are of rawhide, designed to prevent noise and vibration. All pumps are horizontal, with vertical shafts, and so arranged as to be self-priming. Each substation is equipped with a float operating mechanism, so arranged that when sewage in the collecting chambers rises to a certain point the pumps will start automatically. When

tractor and the Chief Engineer left Manila shortly after completing the installation. No attention was paid to balancing the pumps in their absence, and the impression was allowed to obtain that the pumps themselves were defective. This impression gained such currency that proposals were invited for so-called repairs, and a bid involving the expenditure of more than eight thousand pesos was received. Fortunately no contract was awarded nor any work done. Immediately after my return the pumps were balanced and properly lubricated at an expenditure of less than four hundred pesos, which expense was of course borne by the contractor. Not the least of the effects of this balancing of the pumps was the notable drop in the consumption of electric current. All



SANTA CRUZ AND ERMITA PUMPING STATIONS.

Financial.—The funds for the construction of the sewer and water system were obtained by the sale of bonds of the City of Manila, issued by authority of Act No. 1323 of the Philippine Commission, to the amount of \$4,000,000.00 gold. Their sale brought a premium of \$235,484.91 in addition to their face value. The actual cost of both system has been considerable less than the estimates, and there still remains a balance of \$250,000.00 unexpended, and against which no obligations exist.

Certain items not contemplated increased the cost of the works, the principal one being customs duties. Under a ruling of the Insular Collector, approved by the then Governor-General, customs duties on all materials were collected unless the City of Manila was the direct importer. Under this ruling all imported materials for the sewer and water furnished under contracts with the City of Manila paid duty. I am still of opinion that this ruling defeated the intention of the Congress of the United States, and I believe that all sums so collected should be refunded to the City of Manila. The correspondence files show several letters on this subject, and I earnestly recommend that an effort be made to obtain this refund.

Under a ruling of the Insular Treasurer a considerable sum has been paid for exchange on money transmitted from New York to Manila, and also on money from Manila to New York. Since the funds secured by the sale of bonds were deposited in New York, it would seem that checks against these funds would at least have saved the exchange rate for transmitting the money to and from Manila on payments for interest accruing on the bonds. These bonds are five per cent ten-thirties, and the annual interest amounts to ₱400,000.00.

A sinking fund of \$77,480.00 annually is also provided. The approximate operating expense of both sewer and water systems is \$32,500.00 per annum, making a total annual charge of fixed and operating expenses of \$277,480.00. The receipts from water supply for the present year will be approximately ₱360,000.00 and the difference must be made up from general taxation. As the connections with the sewer system increase and the use of water becomes more general, it is probable that the receipts will be very largely increased, and perhaps doubled. Manila's daily consumption of water amounts to less than 9,000,000 gallons at present. A city of its size should be using 15,000,000 gallons. With no change in the rates, this consumption would pay all expenses and retire the bonds at their maturity. The unexpended balance from the sale of the bonds may be used

A NEW TRANSCONTINENTAL RAILWAY

For years the Pacific Northwest called for transportation facilities adequate to meet its constantly expanding needs. Each harvest season the transportation problem faced the lumberman and the farmer, the merchant and the consumer, while the occasional and unavoidable congestion of traffic on the other lines delayed commerce, impeded business, and deprived the Pacific Northwest of Dollars it had earned.

All the continent needed the products of Oregon, Washington, Idaho and their neighbors, but transportation did not keep pace with development. Well might the empire of the Northwest call for more rails and for more cars.

Answering this cry came the Chicago Milwaukee & St. Paul Railway. With a speed unique in engineering annals it extended its line over broad plains and jagged mountain ranges, through tunnels and across great rivers, until in three years it reaches its goal, with almost fifteen hundred miles of new line, and the expenditure of close to \$90,000,000. Fourth among the great transcontinental railways to penetrate the American Northwest, the Milwaukee opens a new era in the linking of the East to the Pacific Coast.

But while the completion of the three earlier arrivals was marked with imposing ceremonies that were watched by all America, the new line saw its last rail laid on March 29, without any golden spike or without any brass band.

A. J. Earling president of the Chicago, Milwaukee and St. Paul Railway system, had long been looking into the Pacific Northwest, for the marvelous development of the region was the wonder of the entire country. Knowledge of world commerce, too, made clear the necessity for the Milwaukee's great network of rails, spreading over a dozen or more Middle States, to have an outlet upon the Pacific. A decade had seen the trade across the largest ocean grow with leaps, while the same ten years had witnessed the production of \$1,000,000,000 in Klondike and Alaskan gold, and the development of a great coastwise business. With its connections east of Chicago, and a Pacific Coast extension, the Milwaukee would virtually span the continent.

While the Milwaukee system had been circumscribed through its lack of a gateway to the Pacific Ocean, other lines were developing great trade through Puget Sound, Portland, and San Francisco. This trade promised to increase in volume with each succeeding year.

Mr. Earling had prevailed upon his somewhat skeptical directors that the extension to the Pacific Coast was not only justified by the immediate business such an extension would gain, but that strategically the Milwaukee could place itself in an impregnable position among railways. He showed that the territory which the Milwaukee's proposed line would serve produces more than a third of a billion dollars annually from the soil, the forest and the sea, and he outlined branch lines as feeders for the main line that would bring the richest proportions of this rich territory with easy access.

He dwelt with especial stress upon the great timber wealth of the Northwest. "It's the last great storehouse of the continent's trees," insisted the president.

"If we can be assured of four trainloads of timber products a day from the forests of Washington, Oregon, Idaho, and Montana, that business will alone pay the operating expenses of our Pacific Coast Branch,"—and that was before the railways were allowed an advance in lumber rates by the Interstate Commerce Commission.

Washington is the greatest lumber producing state in the Union, while Oregon and Idaho combined equal Washington's output. These three states have an annual timber production of more than \$150,000,000, while an army of 200,000 men is dependent upon this greatest Northwest resource. Annually Washington sends out of the State 110,000 carloads of lumber and shingles, while the water trade is of equal proportions.

Before construction of the 1,400 odd miles was authorized, Milwaukee engineers had tramped over and mapped every foot of the territory through which such a line would pass, and had selected a route, remarkable for directness, from Mobridge, S. D., the furthest western point in the old system, to Puget Sound. Estimates made on the cost were so accurate that later there was no call for deficiency appropriations; in fact, actual construction served to reduce, slightly, the original figures.

With accumulated experience in transcontinental-railway building, the Milwaukee was enabled to work out its problems in engineering with greater facility than its predecessors, while the advance in mechanical appliances served to condense into thirty-six months a task that a few years before would have required the greater part of a decade. Also the officials of the Chicago, Milwaukee & St. Paul financed their



(1) UNLOADING 42" RIVETED STEEL PIPE AT SAN MATEO FOR MANILA WATERWORKS.—(2) STEEL PIPE LOADED ON MANILA RAILWAY COMPANY'S CARS.—(3) ANOTHER VIEW OF PIPE IN TRANSIT. FABRICATED BY THE ATLANTIC, GULF AND PACIFIC STRUCTURAL STEEL WORKS.

for the sinking fund or for further extensions of water and sewer systems and stormwater drains, as the Municipal Board decides.

Personnel.—To the personnel of my Department I wish to express my appreciation of and thanks for their services. The determination of the sizes and locations of the sewer pipes by O. L. Ingalls, Principal Assistant Engineer, Sewer System, is deserving of great credit, while to Mr. C. W. Hubbell, Principal Assistant Engineer, Water Supply, the success of the water system is largely due. Mr. A. Gideon has been in charge of the stormwater drains and the distribution system, and his work has at all times been of high order. Without exception, the work of the Assistant Engineers has been markedly efficient.

I also wish to express my appreciation of the work of the contractors. In the face of many difficulties and, in general, with an unskilled labor they have carried on the work to a successful conclusion. Furthermore, they have at all times met this Department and myself in a spirit of fairness and with an evident desire to accomplish satisfactory and permanent construction. It is with pleasure that I pay them this tribute for their efforts.

In conclusion, the City of Manila is now supplied with a sewer and water system, modern, sanitary, and efficient, and of a capacity sufficient for its needs for many years to come.

To the members of the Municipal Board, both past and present, my thanks are due for their assistance, co-operation, and support. It has been a pleasure to be associated with and to serve them.

enterprise at exactly the right time, for their work of supplying the millions needed for the undertaking was not much more than completed when the panic of 1907 shook the confidence in railway securities and delayed many enterprises that otherwise would have been carried to early completion.

The Magnitude of the task that was accomplished in these three years is shown by the final figures. More earth was excavated, in preparing for the road-bed, than the United States Government moved in the Panama Canal zones in the years 1904, 1905, 1906, 1907 and 1908—a total of 60,000,000 cubic yards. In those years the aggregate excavation from the canal was about 55,000,000 cubic yards. Without stir or excitement this American railway company

moved in three years more than one-third as much earth as will be required in the grand total at Panama, including the locks and basis on earth side of the entrance.

Twenty miles of bridges have been built. The bridge across the Missouri River cost close to \$2,000,000, while that across the Columbia cost \$1,000,000. Tunnels exceeding a third of a million cubic yards were driven. Two hundred thousand tons of eight-five-pound steel rails were laid.

Mobridge, from which the extension started, is about midway between the eastern and the western boundary of South Dakota. The first big task for the engineering department was the crossing of the Missouri. Approaches to this structure, built of solid steel and concrete, were particularly long and costly, but the spans were not as long as those later put in place across the Columbia. Each bridge affords trains a passage about fifty feet above the river's high-water mark.

The Milwaukee has sought to secure low grades, and for the most part has succeeded.

When it comes to operating the trains the "ruling grade" on any one division is the most important factor. The ruling grade is the maximum, in ordinary parlance, but it means much; if there is a stretch of say half a mile with a two per cent grade (two feet upward in every hundred) that half-mile determines the size of the train, even though the remaining 200 miles of the division are absolutely level. The ruling grade is like the weakest link in a chain. Curvature is another problem in economical operation, for abrupt curves waste the engine's power just as grades too. The Milwaukee spared no expense to make the new line as straight as possible, considering the mountainous nature of much of the territory through which it passed.

Until the line begins the ascent of the great continental divide in Montana, the grade is slight indeed, and going up the Rockies the ruling figure is 1.66 per cent, comparatively low. From Butte, into the Bitter Root Mountains, following the Dear Lodge, Hell Gate and Missoula Rivers, again there is little incline, while the Bitter Root range is negotiated at 1.7 as a maximum, the same figure reaches in the ascent of the Cascades while the downward grade on the western slope of the Cascades is only eight-tenths of one per cent.

The Milwaukee performs a somewhat unusual feat among transcontinental railways, in crossing and recrossing one of its rivals. Near Terry, Montana, it goes to the northward of the Northern Pacific, making the crossing on an overhead bridge. At Piedmont, just east of Butte, it passes to the southward again.

While the Milwaukee parallels the Northern Pacific in many places, the vast extent of the country through which it passes gives it a territory all of its own, development of which is certain to follow even more rapidly than that opened by the older lines, because of the constantly increasing stream of immigration passing into the broad areas of the Northwest.

St. Paul Pass, in the Bitter Root range, is the highest altitude which Milwaukee trains attain. This pass had attracted little attention from railroad builders before the arrival of the Earling road, but a gradual ascent was found by the engineers, and the backbone of the continent is crossed at 4,160 feet, in the longest tunnel that the new line has opened. It is 8,750 feet in length. Through the beautiful Coeur d'Alene district in Northern Idaho the line passes, and down across the fertile plains of Eastern Washington to Beverly, where the second big bridge spans the Columbia.

In crossing the Cascades the Milwaukee found Snoqualmie Pass so easy to negotiate that a construction of a costly tunnel was unnecessary at first.

"We will be able to reduce our altitude in the Cascade by some 500 feet, with a tunnel underneath Snoqualmie Pass," said Chief Engineer E. J. Pearson, of the Chicago, Milwaukee & Puget Sound, as the extension was called upon its completion. "No determination has yet been reached regarding this tunnel, and our grades now are excellent, but this Cascade tunnel will be driven in time, for the economy in fuel

and powder will be great. It takes money to raise trains 500 feet in the air, and drop them back again. The tunnel as suggested would approximate three miles in length, and would require as long to drill as it has taken to build the Pacific Coast line, for, working from both ends, progress of a mile a year is considered good.

"Our St. Paul Pass tunnel has an easy grade, rising to a summit inside the mountain, but this slope is so slight that we can operate ordinary locomotives where a steeper grade would require electricity. A puffing locomotive fills the tunnels with such a dense cloud of smoke that time must be allowed between trains for the smoke to clear."

Coming down the western slope of the Cascade the Puget Sound line made what is believed to be the deepest fill ever made in original railway construction. Topographer's Gulch was as deep as a twenty-story building. It required 630,000 cubic yards of earth to fill it from side to side, a distance of 850 feet. The hydraulic plant used to sluice the earth required the expenditure of \$60,000 before a cubic yard was moved.

Construction of the extension was carried forward in five sections. The eastern half of the work was supervised from Chicago, but from Butte westward the work was under the direction of H. R. Williams, who was made president of the Chicago, Milwaukee and Puget Sound as soon as the corporation was organized.

President Earling and a party of other officials of the system, including Mr. Williams, made the first trip of inspection over the new line, and expressed themselves as well pleased with its condition, but they deemed it best to delay the inauguration of through passenger could have his way regarding the equipment. The original order was doubled, and then doubled again, and to-day the business confronting the road will make good use of all the cars and engines available.

The Milwaukee has already constructed a line from Seattle, Tacoma, which is to be used jointly with the Union Pacific, and the Union Pacific this year will complete its branch line to Grays Harbor, over which the Milwaukee will operate its trains. A shrewd stroke on the part of the Milwaukee was the acquisition of the Tacoma & Eastern, a road originally built for logging purposes southeast from Tacoma and later developed into a good property with perhaps sixty miles of track. This road, still operated independently, gives to the Milwaukee access to one of the finest timber belts in the Northwest, while the Milwaukee's main line through Snoqualmie Pass opens another fine district, and plans are developing for the construction of a line northward from Grays Harbor into the virgin Olympic Peninsula, containing timber worth scores of millions of dollars.

Whether the Milwaukee will build its own line to Portland, or make a traffic agreement with the Northern and Union Pacific for use of their tracks and bridge across the Columbia, remains to be seen, but it is the announced intention of the new road to reach all the important centers of the upper Pacific Coast.

"We have been so busy completing the line to the Coast, and preparing it for traffic," Mr. Williams said recently, "that we have not had time to complete details of other extensions. Our plans are announced for entrance into Spokane, and a branch line is being built into the Cascade timber, while work is progressing at a most satisfactory rate on the Grays Harbor line, which the Union Pacific is building for our joint use. There is business enough for all the roads now entering the Northwest, and we believe that we are going to get our share. We have made traffic arrangements with the Osaka Shosen Kaisha Japanese Steamship Company to handle our business with the Orient. Six steamships are to be constructed for this line, two of which, the *Tacoma Maru* and the *Seattle Maru*, are in the service, and the third, the *Chicago Maru*, is to follow soon. The fleet is to be increased as rapidly as the traffic justifies."

It has been reported from the first that the Milwaukee would make use of the abundant waterpower along its line, for the operation of its trains, at least through the mountain divisions. Eventually it is more than likely

that electricity will be the motive force for many hundreds of miles, but these plans are not matured, according to Mr. Williams.

"We are carefully investigating this feature, mapping the water courses, and measuring the available power, but further than that we have not gone," said the president of the western line. "It is true, beyond a doubt, that much water power is going to waste in the Western streams, and in time it will be utilized."

The policy of the Milwaukee, through a land department, has been to acquire large holdings of Western timber lands. Timber lands are looked upon by investors as better than Government Bonds. While the extent of the holdings of the new line have never been made public, it is stated that not less than \$10,000,000 has been invested in timber in the vicinity of St. Maries, Idaho; in Snoqualmie Pass; along the Tacoma and Eastern; in the Olympic Peninsula, and in other districts.

To all shippers, but especially to the lumbermen of the Northwest, the coming of the Milwaukee was looked forward to as a boon, and the course of the new line, so far, has justified such optimism. Eagerly the lumber industry awaited the rate schedules which the new road would promulgate, and it has found that, after the great struggle on the rates between the industry and the old lines, the Milwaukee had made reductions without precipitating a rate war that might have proved disastrous. The Milwaukee declined in the beginning to enter a rate agreement with the other lines, stating it preferred to be independent. On Puget Sound the Milwaukee has instituted a car-ferry system, transferring loaded cars from the mills of the Puget Sound district by water to the Seattle or Tacoma terminals. It is probable that passenger traffic out of Seattle is to be handled through the Union Pacific Station, which is to stand opposite Fourth Avenue from the Hill station, and which is under construction at a cost of \$500,000.

The growth of the Chicago, Milwaukee & St. Paul system in the last few years has caused remark in the railway world. The beginnings of the system go back to the Minnesota Central, in 1865, completed to St. Paul two years later. In 1884 its mileage reached extension the total is over 9,000 miles.

The Chicago, Milwaukee & St. Paul Railway is a strong booster for the development of the territory it serves. It has helped to spread broadcast over the country a knowledge of the resources and opportunities offered to settlers and capitalists by the Northwest, especially Montana. Farm papers, magazines, daily and weekly newspapers everywhere have carried advertising of the St. Paul extension and of the regions it crosses. The effect has been marked in the great number of new people that are coming to settle along the line of the road. New towns, new enterprises, new institutions are daily springing into being, where three years ago was nothing but the stock range. The publicity campaign of the St. Paul has had the effect, also, of stimulating the other roads to follow the same system, with the result that the whole Northwest is profiting by these great agents of publicity and of public service.

RUBBER FROM BANANA JUICE

Extensive experiments are being made in regard to the extraction of rubber from the juice of the banana plant. The original investigator was Mr. George C. Benson, and the following excerpt on the subject is taken from *The Georgetown Daily Chronicle*, British Guiana:

"About two years ago, whilst experimenting with some banana juice, so as to find out how best to mordant it, a thick and pliable rubber was found to attach itself to the sides of the enamel dish which held the juice. The rubber was ultimately sent to England and to America, and it was found to be what is known as a synthetic rubber, and when compounded with other rubbers it appeared to have a distinct market value, by increasing both the weight and the value of the rubbers with which it was compounded. This fact is about to be put to the severest test, and numerous samples are to be sent to the best judges both in Europe and America."

CHINA'S ARMY AND NAVY

The appointment of Prince Tsai Tao, the brother of the Prince Regent of China, as Special Commissioner for the Investigation of Military Affairs with instructions to visit Japan, America, England, France, Germany, Italy and Russia, for the purpose of studying the military systems of the different countries, with a view to utilizing this knowledge in the proposed reorganization of the Chinese military organization, may be taken as evidence of the seriousness of Imperial Government in its announced program

March 23. He remained in Japan until April 6th, when he sailed for the United States to continue to Europe. In his suite are Lieut.-General Lord Li Ching-mai, the youngest son of the late Marquis Li Hung-chang, Ha Hanchang, chief of General Staff; General Liang Pi; Hsu-Chi-chuan, chief of horse breeding dept.; Wen Hwa, officer of general staff; Yao Pao-lai, of general staff; Pau Chi-chun, navy general staff; Chen Chin-tung, Lui En-yuan, of general staff of the army; Tien Shen-

news from Europe point to warm receptions at the different capitals.

In a speech at the dinner given in honor of His Royal Highness, Prince Tsai Tao, by the American Asiatic Association at Delmonico's, New York City, May 3rd, which we reproduce from the *Journal*, Brigadier General Ha Han Chang referred to the object of the military mission and included the latest information with regard to the present status of the Chinese military organization. In response to the



H. I. H. PRINCE TSAI TAO
IN THE UNIFORM OF LIEUT. GENERAL OF THE IMPERIAL GUARD CORPS

of developing its military strength to a degree in keeping with the modern requirements of the great empire. The selection of a member of the Imperial Family for this mission indicates the importance attached to the mission. Prince Tsai Tao is a military man of brilliant attainments and holds the position of High Commissioner of the Imperial Guards as well as that of Chief of the General Staff.

The prince and suite started in the latter part of March on this world tour making Japan his first objective and arrived at Shimonoseki

chung, Imperial Guard; Cheng Shao-yuan, chief secy. army general staff; Tuag Chang, director Nobles school; Wu Wei-ya, doctor of Imperial guard; Tang Pao-chao, attaché general staff, French interpreter; Cheng Ching-pan, attaché general staff, German interpreter; Tan Hsui-kuai, of the navy.

He was warmly welcomed by the Japanese and given every facility to inspect the modern military organization of that country. Reports from the United States indicate that he was warmly greeted at all the cities en route and

toast "The National Army of China," General Ha Han Chang said:

"I consider myself fortunate that I have this opportunity as a member of His Imperial Highness' staff to visit the great city of New York and to meet the members of the American Asiatic Association who are known to have the closest relation with China. To me has been assigned the honor of responding to the toast of the National Chinese Army. I take great pleasure in giving an outline of the subject as time forbids going into detail.



H. E. TIEH LIANG
RECENTLY SUCCEEDED BY GENERAL YIN CHANG AS WAR
MINISTER FOR CHINA



H. E. PRINCE YU-LANG
HEAD OF THE ARMY ADVISORY BOARD

"China as a military power dates from the China dynasty which flourished about 3,000 years ago. As every student of Chinese history knows, Chinese civilization reached its height in those days of military glory. About three hundred years ago there was a thorough reorganization of the Chinese army; at that time Peking alone had a garrison of 500,000 troops under different banners; there were, besides, other troops distributed among the provinces in army corps, divisions, brigades, regiments and battalions. These were placed under the command of high officers, who received their orders direct from the commander-in-chief. For a second time China was regarded as a military power.

"During the reigns of Hanghsi and Yung Ching in the seventh century, the Emperor himself used to lead the troops in person, and raised the military ardor of the nation to the highest pitch. With a strong hand the peace of the East was maintained, while Europe was plunged into all the horrors of war. It was found difficult to keep the army in an efficient state during a period of profound peace, and an inefficient army naturally invited political disturbance. I think Napoleon was right when he said something to this effect: 'War is the harbinger of civilization.'

"Now, China again feels the need of putting her army on an efficient basis. With this end

in view the late Emperor Kwang-Hsu ordered the reorganization of the War Office, to which were especially attached the general staff of the army and bureau of military training. At the same time it was decided to organize an army of thirty-six divisions, and this work was to be completed in 1912.

"Now the Chinese army consists of eighteen divisions. Each division is composed of two brigades of infantry, each brigade of two regiments, each regiment of three battalions and each battalion of about five hundred men. Each division has also a regiment of cavalry, a corps of artillery with over fifty guns, a corps of engineers and a commissary corps.

(Continued to page 89.)

THE FAR EASTERN REVIEW

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AMERICAN-JAPANESE RELATIONS

The voyage of the Hon. Jacob MacGlovak Dickinson, Secretary of War, to the Philippines by way of Japan was marked by the warm welcome extended to him by Japanese officials at Tokyo and the exchange of sentiments tending to reassure the people of both countries that the traditional friendship between the two nations is not strained by the unwarranted attitude of several groups of agitators in Japan and America as well as Europe, who have been given more newspaper space in both hemispheres than their importance warrants. That this is the official attitude, and indeed the attitude of the great majority of the responsible citizens of both countries, may be asserted in view of the many exchange of courtesies that have taken place by visiting delegations representing the leading commercial interests of both countries and the warm welcome received respectively on either side of the Pacific.

Secretary Dickinson is a man of unusual attainments and stands foremost among America's substantial and patriotic officials. Selected for the post of Secretary of War by President Taft, Secretary Dickinson may be said to be imbued with the President's ideas regarding the insular possessions and Far Eastern affairs or Mr. Taft would not have chosen him to assume charge of a department in which he takes the greatest personal interest. And for this reason, if for no other, Mr. Dickinson's speech at Tokyo may be taken to fully represent the attitude of the Taft administration towards Japan. It should also allay any fears of ulterior motive in the attitude of Washington towards Far Eastern questions and dispel any thought of a disposition on the part of the American government to impose on the island empire.

Count Komura, the Foreign Minister, took occasion at a dinner given in honor of Secretary Dickinson to direct attention to the evil influences at work sowing seeds of distrust and antagonism between America and Japan. In reply Mr. Dickinson directed attention to the development of America and Japan from "hermit kingdoms" to powers having an interest in world affairs during the last twenty years and the continuous friendship during these years of progress. He pointed out that President Taft was fully conversant with Far Eastern affairs at first hand having studied them at a proper perspective, and now as chief executive was in a position to "put a true estimate upon all suggestions that might tend to disturb the relations between the two countries." There is no doubt but that he voiced the sentiment of the great majority of thinking Americans when he said:

"I think that you have justly and truly said that there is no reason why the careers of these two countries should not be pursued in parallel lines—with a certain rivalry, to be sure, but a rivalry which may be pursued in friendship without involving conflicting interests of a disturbing character.

"There is every reason why amity and cordial relations should exist between us, and to my mind there is no reason why other conditions should intervene. It is for the broadminded, patriotic people who are the leaders of thought in these two countries to dominate the situation and see that the people are not misled by false lights or sinister suggestions into an attitude which is hostile to their true interests and which could not be justified on any rational ground.

"The American people, while in a certain sense a warlike people, are yet great lovers of peace. I think I may justly say that their history illustrates that there is no more peace-loving people, or one more inclined to the principles of arbitration in the settlement of international disputes. Many differences are now willingly submitted to the character of adjudication which were formerly thought to be terminable only by resort to arms. Having such ideals, we may well hope to look forward in the future to the preservation of that friendship which up to the present time has been maintained, and to see it cemented with still stronger and closer ties."

The greatest intrigue of the last decade seems to have for its purpose the undermining of the friendship existing between Japan and Amer-

ica. This propaganda is given publicity in the yellow press of the United States and Japan and is egged on by a few irresponsible European writers. Little by little there has been created the impression that the interests of Japan and America were bound to clash. Then by degrees it assumed more definite proportions until now there is hardly a European writer who takes it upon himself to solve all the troubles the Far East is heir to, who does not declare that it will all end by conflict between Japan and America.

Now this may not be a well organized press campaign, but it has all the ear marks of it. Were one to trust one's ears these days, since the signing of the Russo-Japanese convention, all the nations, affected directly or indirectly by its terms, were having one continuous love feast. And while we are reading how France, England and Russia love Japan and are united together to preserve the world's peace, we find a few public men in each of these peace-loving nations declaring how unfortunate it is that America and Japan must proceed to destroy each other. The prodding continues. Japan's pride is hurt by misquotations from speeches of prominent Americans and America's pride is touched by lying reports quoted from the yellow press of Japan. The agency that distributes this seed of distrust among the citizens of the two countries must indeed be a powerful one and one to be greatly feared in the interest of peace. We wonder if despite this peace cordon flung round the globe there might not be found a publicity bureau of some proportions with a well filled treasury, that is not working consistently in sympathy with the program of international love and amity?

And so Japan must not permit herself to be misled, and if we are not mistaken the leaders of thought of the Empire are not so obtuse. And it would be well if the citizens of America would seek the motive behind all this vicious lying propaganda. It may serve the yellow press of America with a sensation once in a while, but it could not serve so continuously unless there were the purpose behind it, to keep the agitation from passing into innocuous desuetude.

We have reached these conclusions from the manner in which General Bell, Banker Shultz and Representative Hobson have been viciously misquoted recently. We have taken the liberty of carefully examining the speeches of these men and have failed absolutely to find one expression that might be construed as offensive to Japan or suggestive of hostilities between the two countries, and we do not believe that the lying reports of these speeches could have been made unless those who transmitted them were either vicious by nature or of that low order of creatures sustained by the yellow press who so lack principle that they would lend themselves to the service of just such an organization as we have suggested is now active.

We believe, however, that whether the agitation to spread distrust between the two nations, who have everything to gain by prolonged peaceful intercourse, is directed by a well defined organization is confirmed or not it behoves the intelligent from among the citizens of both nations to maintain great reserve in the reception of any reports that serve to create a feeling of antagonism between the two peoples.

It is certain that neither Tokyo nor Washington desire conflict and, so far as we can see, there is no motive for any change in that attitude. Then where is the basis for all this falsifying and misrepresentation? We believe it will some day be found in a well organized attempt on the part of interests outside the United States and Japan to precipitate trouble.

THE SPIRIT OF MANILA

There is every indication that the businessmen of Manila do not propose to confine their operations to the Philippine Islands or to remain inactive in the struggle for Far Eastern trade. For the last decade the preliminary plans for the development of a great eastern commercial metropolis and distributing center for America's Oriental trade, in a large measure, have been completed and some of them carried out to a point where it is possible to report

commendable progress towards the end in view. In this work the Philippine administration has taken the initiative and there has never been lacking the enthusiastic and hearty support of the progressive commercial community and the local press. All elements seem to unite in an endeavor to promote local pride and legitimate endeavor towards bringing to the Philippine capital the greatest possible commercial prominence.

Now in all this "boosting," as it is called locally, there is an acknowledgment of the many drawbacks to early realization of fond hopes, but these free admissions are not accompanied by any expression of hopelessness. The opposite is the case. The Manila businessman of whatever nationality is invariably an optimist, generous in the support of public movements that benefit the community at large and, in sporting parlance, a "good loser" on occasion. The trials of the last decade have brought to the fore his many desirable qualities, and now that the dawn of prosperity is here, and his personal worries are largely eliminated, he is giving a large portion of his time and attention to advancing the interests of Manila to a place among her sister cities in the Orient. He desires above all that her name shall stand for the best there is in Eastern Asia.

And it is for the purpose of attracting attention to the desirability of Manila as a distributing center for the Far East that the commercial interests and the local press there have united. The new harbor at its present stage of development is one evidence of the progress of plans for the future. Now comes the proposed declaration of a free zone where goods from all parts of the world may be stored until exported to other ports in the far east. Every effort is being made to furnish desirable berthing accommodation and cargo handling at a minimum of cost at Manila and the government is in the spirit to go further if it becomes necessary to make the port more attractive to the shipping trade. But a modern harbor does not fulfil the total in facilities that attract steamship lines and trade while it may go a long way to do so. Manila lacks coaling facilities and drydocks. And note the activity in developing the coal measures of Batan to provide desirable coal at low price. Manila is not idle in this respect and nothing but the solution of this coaling problem will satisfy them. Every other resident has a few shares of coal mining stock not because he expects large dividends, but he knows that he must help in the development of the industry if Manila is to compete with other ports in the Orient in coaling facilities.

Now about the docking facilities. This is as important as the coal if Manila would point with pride to her attractions as a port and distributing center. And since Manila merchants claim that Manila is to be made the big metropolis, and therefore it is necessary to increase docking facilities, why of course they are not going to rest until they are increased. Evidence of this spirit is echoed in Manila's press that is nothing if not patriotic and progressive. The *Bulletin*, the leading commercial daily in the islands, under the caption "Manila's Future as a Distributing Center," says:

"The report of the early retirement of the Toyo Kisen Kaisha from its working arrangement with the Pacific Mail and the prospect that it has entered into an exclusive agreement with the Western Pacific for its Pacific freight carrying, makes an interesting situation in transpacific commerce and bodes well for greater activity in Oriental trade. And in it all Manila should profit.

"The opening of the Chicago Milwaukee and Puget Sound Railway was the first movement toward the breaking of the Harriman-Hill monopoly in transcontinental freights and the opening of the Western Pacific this month adds to the gayety. With their respective connections in the Pacific, the war will be extended in a merry fashion to our very door.

"The Pacific Mail does not propose to give up the battle by any means and indeed it was in that company's motive for ordering the two 38,000 steamers for Pacific waters that the news of the defection of the Toyo Kisen Kaisha became known. This involves an expenditure

of about \$6,000,000 and will add two vessels well to the fore compared with Atlantic standards.

"All this activity goes to show that more and more interest is being taken in Oriental trade and in this activity the Philippines should get its share of attention. The proposition to establish a free zone in the new port and to encourage the establishment of a far eastern distributing center in Manila should not lack for encouragement at this time and we believe that even if the end in view is not accomplished as soon as we would wish, we should do our share to make Manila sufficiently attractive so that once the American manufacturers begin looking for a distributing center, that Manila will offer the best facilities for the purpose that may be found in the Orient.

"At the present time we must admit that Manila does not shine as a distributing center for the East. It is confining its attention almost entirely to the island trade. And with the American manufacturers reticent about Oriental commercial adventure, the present outlook for Manila in that role is not very encouraging. However, Rome was not built in a day.

"We must make a beginning. This might be done by officially establishing a free zone. The announcement alone would prove of advertising value. Then keep up the good work of interesting American manufacturers in Oriental trade and the desirability of just such a distributing center as we are proposing to develop at Manila. It will not take many years to induce the manufacturers to make a start and the rest will be easy.

"Particularly should this movement appeal to the Manila merchant at this time when the different steamship companies show an eagerness to secure advantages in the different ports. We are in a position to offer special inducements to shippers and importers as well as the shipping companies and with one of the finest harbors in the east, there is no reason why Manila should not claim her portion of Oriental trade within the next decade. There are many advantages and inducements that might be made that would not fail to help along this program and it rests with us to figure them out carefully and place them where they will do the most good."

There is no controversy over this matter. Following the *Bulletin* comes the *Manila Times*, the pioneer daily of the Philippines, with a complete endorsement of the *Bulletin's* comment and with a handsome addition of good suggestions in the typical patriotic Manila spirit. The *Times* says:

"The *Daily Bulletin* published a very interesting and timely article on the future of Manila as a distributing point, based on the entrance to the Pacific trade of the Chicago, Milwaukee and St. Paul and Western Pacific railways, and the decision of Pacific Mail to order two new liners of large tonnage. The *Bulletin* points out the fact that Manila does not shine as a distribution point in the oriental trade and once more brings forward the suggestion that there be created a free zone at this port in order to simplify the handling of goods intended for reexport. This whole question is one of very great importance not only to the future of the Philippines but to American trade in the far east and should commend itself to all who are interested in either.

"Manila, as has been pointed out on a number of occasions, offers peculiar advantage to American manufacturers for the distribution of their products in this part of the world, but up to this time it has not been possible to make much progress with the project. The establishment of a free zone would tend to advertise it, but it will be necessary also to work among the American manufacturers and commercial organizations.

"Manila is the natural oriental terminus of the American Trans-Pacific lines, but at the present time the port lacks the facilities to make its use for such purpose possible. It has no drydock capable of handling the liners, it relies upon imported fuel and the cost of repairs exceeds the cost at Hongkong. Philippine coal measures are being opened and it will not be many years before Manila can be made an excellent coaling port, but the rest of that problem remains unsolved and probably will remain unsolved until the governments here and

at Washington unite for its solution. At the present time it is the practice, especially of the Washington government, to throw business to the yards of Shanghai, Hongkong and Singapore. In this connection several million dollars have been spent in the last few years and while it has represented economy for the time being its effect has been to injure the local industry and to further set back the time that Manila will be a fully equipped port. Steps are now being taken to once more draw this question to the attention of the two governments and every person who has a spark of interest in the welfare of the community should unite in urging fair and intelligent consideration for it.

"There is a future for this port and that future can be made a very great one, but the two governments concerned have got to interest themselves in the project and lend their money and influence to the laying of the foundation."

There is always the fixed purpose of making the future of Manila something to be proud of. And Manila is succeeding. That kind of spirit will not down. Indeed, a few years ago it was no unusual thing for the wandering Manila to find his city tabooed on every hand throughout the Orient, in Europe and in America. Today no such attitude towards Manila is found. Instead of being vilified, Manila has become, during the last few years, one of the most attractive ports in the East for tourists. Its praises are being sung everywhere. And all this is due to the spirit of the merchants and residents who have made an expensive and well directed campaign of publicity reaching every part of the world. They have entertained thousands of strangers at personal expense and, slowly but surely, the real Manila and the real Manila spirit has been recognized. And yet the good work by organization is being kept up and the year 1910 is being marked by the most effective work. The Merchants' Association is the most sanguine of all the organizations in this respect. Then there are the state societies. Each state has a committee searching for visitors from the homeland. If one is found for instance from Ohio, he will find himself the guest of a strong organization from his home state and by the time he leaves, another "booster" for Manila and the Philippines has been added to an already long list.

And in all this desire to further the interests of Manila, the spirit of reciprocity with other cities of the east is being fostered. Manila is ready to co-operate with her neighbors on any movement designed to benefit all. This has been demonstrated in many ways during the last decade. And in return an improvement in the relations among the far eastern cities, and especially towards the Philippine capital, has been noted.

Judging from the patriotic attitude of its citizens, Manila may be expected to be heard from in the future, and if the port does not secure its share of far eastern trade it will not be the fault of the men in whose hands its destiny rests at present.

THE PROPOSED INVARIABLE CALENDAR

The reform of the Gregorian Calendar has been the subject of much discussion among savants during the last twenty years and many suggestions in the direction of simplifying and revising it to meet modern commercial conditions have been offered for consideration. The adoption of some new system of dividing the year has been advanced by not a few publicists in order to eliminate confusion occasioned by the conflict of the Julian and the Gregorian calendars.

The latest proposal and which has won favorable comment in the leading journals of Europe is that of Professor Grosclaude of Geneva. In the June number of the *Internacia Scienca Revuo*, Professor Grosclaude presents a summary of his scheme accompanied by a calendar for the year. He writes:

"Imitating the liberty that Emperor Julian took in adding one day to the year each fourth year, and similarly that taken by Pope Gregorio in cutting out three days every 400 years, to keep the calendar in accordance with the seasons, I think that one may well follow the same course of action and compute a year as 364 active days, the 365th being made an extra

day which would be placed before the first of January and might be called New Year's Day. The disposition of this day would in no wise be detrimental commercially as it is a day universally accepted as a holiday.

"If this proposal proves acceptable, the remainder of the project would fall in line quite simply. The 364 days naturally divide into four equal parts and one can retain the custom of speaking of 'quarters' and 'half years.'"

"Each quarter year having 91 days divides exactly into 13 weeks in a manner that makes each quarter begin on a Monday and end on a Sunday. This practically explains the whole system. Our present Leap Year Days would be located after June 31st, and before July 1st, to be an extra day and like the proposed New Year's Day, to be part of no week and an accepted holiday.

"One of the consequences of the acceptance of this proposed calendar in civil life would be the definite fixing of national feast days, vacations for schools, the calendars of law courts, parliaments, etc. To the commercial world it would be of great convenience and benefit from the fact that the 30th day of the month would never be Sunday, while the last day of every quarter would always be Sunday. Each month would therefore reckon 30 days. As a result percentage calculations and the striking of commercial balances would be greatly facilitated. In addition to this the fixed calendar could be easily memorized, a thing impossible with the Gregorian Calendar."

The calendar accompanying this comment is a simple division of the year which begins on a Monday and ends on a Sunday. Each quarter is divided into two months of 30 days and one month, the last month of each quarter, 31 days, the 31st day being a Sunday as described above. This places 31 days in March, June, September and December.

There is no change in this calendar from year to year excepting the addition of Leap Year Day between June 31st and July 1st when it is due. The holidays marked are fixed dates such as Palm Sunday, March 31st, Good Friday, April 5th; Easter Sunday, April 7th; Pentecost, May 26th; All Saints, November 1st, and Christmas Day, December 25th.

THE RUSSO-JAPANESE CONVENTION

The official publication of the terms of the convention, July 17th, confirmed the unofficial reports as to its character upon which we based our comment in July. As given out by the Japanese government the terms of the convention follow:

"The Imperial Government of Japan and the Imperial Government of Russia sincerely attached to the principles established by the Convention concluded between them on the 30-17 July 1907 and desirous to develop the effects of that Convention with a view to consolidation of peace in the extreme east have agreed to complete the said arrangement by the following provisions:

"ARTICLE 1. With the object of facilitating communications and developing the commerce of nations the two High Contracting Parties mutually engage to lend to each other their friendly cooperation with a view to amelioration of their respective railway lines in Manchuria and the improvement of the connecting service of the said railway and to abstain from all competition prejudicial to the realization of this object.

"ART. 2. Each of the High Contracting Parties engages to maintain and respect the status quo in Manchuria resulting from the treaties, conventions and other arrangements concluded up to this day between Japan and Russia or between either of these two powers and China. The copies of the aforesaid arrangements have been exchanged between Japan and Russia.

"ART. 3. In case any event arises of a nature to menace the status quo above mentioned the two High Contracting Parties shall in each case enter into communication with each other in order to arrive at an understanding as to the measures they may judge necessary to take for the maintenance of the said status quo."

The French press continues unanimous in approving of the convention. The *Temps* believes

the two powers have every reason, mutually, to look after their own and each other's position, which, in spite of the theory of the "Open Door," is by force of circumstances a privileged one. It finds great satisfaction that the respective allies of England and France are drawn into closer intimacy and that the danger of misunderstandings in Europe over Asiatic questions have now been eliminated.

The *Débats* declares that the convention is a definite answer to the attempts of China to regain her ascendancy in the territory involved and to the Knox proposal to assist her by means of the neutralizing of Manchurian railway. The *Débats* is also pleased that it will give Russia a free hand in Mongolia and removes all objection to the early annexation of Korea by Japan.

The American press with few exceptions take little interest beyond passing comment and generally accepts the convention as a satisfactory adjustment of the connecting services of the railways controlled by the two countries in Manchuria. The *New York Herald*, however, takes the view that the convention is prejudicial to the interests of Germany and the United States.

The *San Francisco Chronicle* states that Secretary Knox, while trying to achieve something in Manchuria in China's interest, succeeded only in making an exploitation partnership possible between Russia and Japan. "The Japanese-Russian scheme," says the *Chronicle* "is to make joint rates for railway freight, build railway feeders, settle immigrants and otherwise exploit the country. There is not much 'neutralization' in all this; and incidentally, considering Hay's note and Knox's letters, very little politeness."

The German press is generally reserved in its comment withholding judgment until the economic aspect is more fully developed. The German foreign minister upon being officially notified declared that he expected the Open Door principle to be maintained in the future.

The Japanese press generally endorses the agreement. The *Jiji Shimpō* takes the public into its confidence and states that France and England were consulted by the contracting parties at every stage of the negotiations; were heartily in accord, and that this may be taken as indicative of the official approval of three of great powers of Europe. The *Kokumin Shimbun* says that the principle underlying the convention is the desire of the two powers to remove any possible cause of friction between them. It refers to the objection of Germany and Austria to the free hand it gives Russia in the Near East as a feature with which Japan has nothing to do as it is not probable that Japan will ever become mixed up in the Balkan trouble. The entire Japanese press denies the existence of a secret convention as has been alleged, giving Russia a free hand in Mongolia and Japan the privilege of annexing Korea.

The British press is not unanimous in its approval of the convention. The *Times* declares it is a fresh contribution to the peace of the world, but the *Manchester Guardian* believes it is mainly directed against the United States, while the *Standard* is of the opinion that it is directed against China's aspirations to reestablish her sovereignty in Manchuria.

But China officially and through the press is far from pleased with the manner in which the two countries proceeded to an agreement respecting her territory without consulting her, and, suspicious of Russian and Japanese designs, hints at a secret understanding.

In reply to the official notification of the signing of the convention the Waiwupu issued the following note:

"The Imperial Chinese Government having carefully perused the new Russo-Japanese Convention, concluded on July 4, 1910, copies of which were handed to the Waiwupu by the Russian and Japanese Ministers in person, the following acknowledgment, dated July 21, has been sent to them:—

"Since the Convention expressly states that each of the High Contracting Parties engages to maintain and respect the treaties, conventions and other engagements concluded between China and Japan, between China and Russia, and between Japan and Russia, the Convention, therefore, accords with and confirms

the principles of the engagements entered into by Japan and Russia by the Treaty of Peace of 1905 and those of the treaty and agreement concluded between China and Japan relating to matters in the Three Manchurian Provinces. For by Article III of the Russo-Japanese Treaty of Peace, Russia and Japan mutually engage to restore entirely and completely to the exclusive administration of China all portions of Manchuria and declare that they have not in Manchuria any territorial advantages or preferential or exclusive concessions in impairment of Chinese sovereignty or inconsistent with the principle of equal opportunity, and by Article IV Japan and Russia reciprocally engage not to obstruct any general measure common to all countries which China may take for the development of the commerce and industry of Manchuria. In the same year China and Japan named their plenipotentiaries and agreed upon and concluded articles at Peking, based on the Treaty of Portsmouth and relating to matters in the Three Manchurian Provinces, whereby the opening of Manchuria became an accomplished fact.

"The Imperial Chinese Government will, therefore, in the future, act in accordance with the principles declared in the Treaty of Portsmouth and execute the provisions of the treaty and agreement with Japan, maintaining with increased efforts such matters as measures arising from the exercise of China's rights of sovereignty, the principle of equal opportunity, and the development of the commercial and industrial prosperity of three Manchurian provinces, with a view to the promotion of the best interests of all parties.

"A copy of the above acknowledgment has been presented to the Governments of all the countries with which China enjoys treaty and diplomatic relations."

This promises to become a historic document and will have a bearing on the situation in Manchuria when the time arrives for the retirement of Russia and Japan from the Eastern Provinces.

H. E. Chang, Minister to the United States, is quoted as saying that the convention has interfered with the conclusion of the Chinchow-Aigun agreement and that Americans sincerely regret that their benevolent purpose in proposing the neutralization of the Manchurian Railways has led to a further restriction of China's sovereignty in that region.

Altogether, no incident of the year has created more world wide attention.

JAPANESE DELEGATES IN CHINA

The reception of the Japanese delegates at Shanghai, June 16th, was one of the most important during an interesting tour of the principal points in China of a representative body of businessmen, and all the visitors have expressed themselves more than pleased with their reception and their experiences as guests of the Chinese. The purpose of the visit, as announced, was to promote closer commercial as well as friendly relations with the Chinese. From all accounts the party succeeded in making a good impression. The Nanking correspondent of the *Mainichi Dempo* refers optimistically to the visit of Mr. R. Kondo and his party and expresses the belief that the result will be a more friendly spirit among the Chinese toward Japan. All the newspapers have referred in a friendly tone to the visit including even the papers of anti-Japanese tendencies. Already, says the correspondent, there are signs that the Chinese are beginning to regard Japan more as a friendly neighbor than a hostile rival. At the reception at Shanghai Mr. Chu-Ching-tzen in his address of welcome stated that the relations between China and Japan should be strengthened by more friendly intercourse between the businessmen of the two countries.

In reply, Mr. Kondo stated that the amicable relations between China and Japan were the seedbed of peace in the extreme east and that the peace of the extreme east was at the bottom of the peace of the world. Reference was made during the visit to the racial and language kinships which would be wasted if not utilized in furthering mutual economic interests.

CHINA'S ARMY AND NAVY

(Continued from page 86)

"In order to increase the efficiency of the service the Prince Regent thought best last year to detach the general staff from the War Office, and appoint His Imperial Highness as Controller General, with myself as chief officer. I need hardly add that it is the settled purpose of His Imperial Highness to use the utmost endeavor to bring the Chinese army to the highest state of efficiency. With the view of giving dignity to the military profession, he proposed last year that the Emperor should assume the title of Commander-in-Chief of the military and naval forces of the Empire, and that during the minority of His Majesty the Prince Regent should act in that high capacity.

of China with the necessity of an effective military force, modernly equipped to preserve the Empire to herself and save her from the humiliations to which she had for many years been subjected for lack of a proper military spirit. Judging from the activity along military lines now manifest throughout the Empire, it may now be truthfully said that the old Chinese proverb, "no good man would be a soldier, no good iron would be a nail," no longer guides the intelligent Chinese mind.

The present status of Army organization in China is based on the Imperial Edict following the recommendation of H. E. Yuan Shih-kai providing for the organization of thirty-six Divisions of 12,500 men each to be known as the National Chinese Army. The original intention was to have this organization com-

in new interest in the many military departments, and the skeleton plans now being followed will be developed in a comprehensive scheme along the most modern methods selected from the best now in vogue in the leading countries of the world. It was thus that Japan worked out her splendid organization, adopting the best and excluding the more antiquated. China proposes to benefit by Japan's experience.

The National Army (Lu-Chun). The Imperial Edict of June 1, 1907, established the Ministry of Army Affairs (Lu Chun-pu) comprising a President, two Vice-Presidents, two Councillors and two secretaries. H. E. Tieh-Liang was the first president. Prince Ching held the post of Senior President of this board until October, 1909. The Lu-Chun-Pu was intrusted with the entire control of the organization of the



GENERAL YIN CHANG AND STAFF AT THE ANHUI MANEUVERS—RECENTLY PROMOTED FROM MINISTER TO GERMANY TO WAR MINISTER TO SUCCEED H. E. TIEH LIANG.

"It was the practice for the eighteen divisions of the imperial army to guard Peking by turns, but last year the Prince Regent thought this inconvenient, and ordered the organization of a special body of troops for the protection of the palace, with himself as Commander and Prince Tao as Inspector General.

"China, on account of the extent of her territory, the density of her population and the length of her coast line, needs a large army for protection and defense. It is the purpose of the Prince Regent to provide the country with such an army. The object of this mission is to carry out the ideas of the Prince Regent in this regard.

"I consider it a great privilege to be able to see in so short a time so much that is interesting and instructive in this country from a military point of view. For this privilege I have to thank the Government and people of the United States."

Ten years ago, China's military organization might be said to have been a negligent quantity. The carrying of arms was not considered an honorable profession with the result that none of the better class of Chinese took the slightest interest in providing a comprehensive army for the defense of the country and, indeed, the internal system of military police was far from satisfactory.

It might be said that H. E. Li Hung-Chang was the first to initiate a movement to encourage a military spirit among the younger generation. That was over eleven years ago. He established military schools and did everything in his power to induce the better class to take a course of training and accept a career in the army. The brilliant success of H. E. Yuan Shih-kai, with his Northern Army developed under modern training, made a marked impression on the Chinese people and did more than anything else up to that time in elevating the Chinese conception of the profession of arms.

Then followed the demonstration of Japan, with her splendid military organization during the war which removed the prejudice against the soldier and impressed the better classes

plete and an army of 450,000 trained soldiers ready for the field in 1918. According to German authority, this organization will be effected in 1912 or six years earlier than proposed.

"This National Army is exclusive of the Imperial Guard Corps, comprising three divisions and an aggregate of 30,000 men, and the provincial troops. The reorganization of the Imperial Guard as outlined by the Prince Regent by the decree of December 3rd, 1908, and provided for its completion of the organization in two years. The provincial forces are a separate body of men and aggregate according to various estimates to about 500,000.

Gen. von der Boeck of the German Army, in an article on the Far Eastern situation and particularly the relations between Russia and Japan in the *Deutsche Revue*, directs attention to what he terms an important factor as affecting these relations, in the renaissance of the Chinese military power. "Japanese instructors," he writes, "swarm in China, and are swiftly building up a mighty military machine as their ally."

"The original plan of the Chinese Government was to form thirty-six divisions, each of 10,000 men, and to have this entire force ready to take the field before the year 1922, but it is perfectly evident from the reports which have filtered through to Europe that this huge army will be ready by 1912, or ten years earlier than was originally intended.

"Gen. von der Boeck is inclined to believe from the reports of German officers who have recently visited China that in 1912 the Chinese will possess a well equipped army of half a million men, the greater part armed with modern weapons and with a discipline and organization infinitely superior to anything which China has hitherto produced. Gen. von der Boeck thinks that Japan's policy of Asia for the Asiatics, with Japan at the head of the coalition of the yellow races, will then be within measurable distance of realization."

The tour of investigation under the direction of H. I. H. Prince Tsai Tao will no doubt result

new army. It is divided into a central department, a military council and ten bureaus.

The Council handles matters of organization and intelligence, and the ten bureaus deal largely with corps matters, such as transport or quartermaster, commissary, arms, ammunition, artillery, forts, recruiting, military law, cavalry, etc. In addition to the bureaus, there is a General Staff divided into 5 bureaus and sub-divided into 15 sections. Its prescribed establishment is 58 officials and 14 military officers, who work out plans of national defense, and supervise generally the instruction of officers for the staff and control the military academies and schools. The active direction of the Lu-Chun is controlled by the Board, though for organization, discipline, supply and pay the provincial viceroys or governors are responsible. The latter are also responsible for the efficiency of the troops allotted to their respective provinces which are periodically inspected by generals attached to the central board.

According to an edict issued on February 17th, 1910, H. E. Tieh Liang, President of the Ministry of Army Affairs, was given a month's leave on account of severe illness and Shin Shun appointed to act for him on the Board of War. The same edict named Na Ching, a brother of Na Tung, as Vice-President of the Board of War. Later H. E. Tieh Liang submitted his resignation and General Yin Chang, Chinese Minister to Berlin, was appointed to succeed him. Many reasons are given for Tieh Liang's resignation, among them that the Prince Regent had refused to recognize a loan of \$1,800,000 which the former had contracted on behalf of the Board of Army Affairs and as result H. E. Tieh Liang is said to be personally responsible for its redemption. Other authorities accredit it to his recognition of his waning influence since the organization of the Imperial Guard, the independence of the General Staff and the establishment of the Naval Bureau were confirmed. Others claim that he was untrue to his old friend Yuan Shih Kai and

forced the latter out of politics as a return for the latter's influence in securing for him recognition, and now he in turn finds himself out in the cold, and it is said by influences not unfriendly to Yuan Shih Kai.

Of his successor the Berlin Correspondent of the *North China Daily News* says:

"General Yin Chang has the reputation of being fully alive to modern military developments. Shortly before his return to Germany he greatly impressed German military critics by refusing to allow some manoeuvres to be interrupted by the death of the Emperor. This was regarded as a perfectly correct attitude which would almost certainly be adopted in similar circumstances in this country. A little later he won the unreserved respect of European diplomatists by refusing to allow himself to be recalled from his post after the death of his mother, preferring to remain at work rather than to accept the usual three years' leave of absence during the period of mourning. The General enjoys probably a greater measure of popularity than any other Oriental diplomatist in Germany.

"He is expected to produce a further and noticeable improvement on the most approved modern lines in the Chinese military organization. For his own part, however, he does not think so highly of the possibilities that lie before him. A few days ago, meeting His Excellency at the reception of the Foreign Press Association, I asked him whether he were glad to be going home, expecting, of course, the common-place reply. To my surprise he remarked 'No, I am not glad to be going back. I would rather have remained and worked here. I do not think that our country is yet sufficiently far advanced for a man to be able to achieve great results in a short space of time. I do not look upon my appointment either as an enviable one or one in which I am likely to be able to achieve any very striking results.'

"I gather that the change will not be made at any rate for a couple of months until after the return of the Prince and the special Chinese Commission to Berlin."

Reuter on March 24th announced that, in the course of an interview with the *Lokal Anzeiger*, General Ying Chang said that he contemplated introducing universal military service in a modified form into China and also to found military training schools. These plans, he said, would doubtless bring him into conflict with the Ministry of Finance. He, however, intended to submit his plans to the Prince Regent and if

the difficulties proved insurmountable he would resign.

A Peking telegram to the *North China Daily*

News says that the proposal was recently made to replace all the older officials in the Ministry of War by graduates with modern military



H. I. H. PRINCE TSAI-HSUN
PRESIDENT OF THE NAVAL BOARD



H. I. H. PRINCE TSAI-HSUN
PRESIDING AT A LUNCHEON ON HIS FLAGSHIP. AT THE PRINCE'S LEFT IS ADMIRAL CHING, AND OPPOSITE SITS ADMIRAL SAH

training, and this proposition provoked a storm of ill-feeling on the part of the old officials who number over 2,000 men. It was partly due to this reason that ex-President Tieh Liang hastened his resignation; and it is stated that the new President elect, H. E. Yin Chang in Berlin, is none too anxious to face the situation and has tried to defer his return as long as possible, on the ostensible ground of waiting for Prince Tsai Tao's arrival in Germany.

The Imperial Guard of China.—By Imperial Decree issued December 3, 1908, the Prince Regent appointed Prince Tsai To, Prince Yu Lang and H. E. Tieh Liang Special Commissioners to supervise the training of the Imperial Guard and at the same time appointed Prince Pu Tung (younger brother of Prince Lin), T. E. Ha Hang Chang, Hsu Chih Shan, Chang Yu Chun, Tien Hsien Chang, and Wen Hua Military Councillors. The Prince Regent retained the right to supervise the work of the commissioners and its councillors and under this plan the organization of the Imperial Guard was begun.

There had been what was called the Palace Guard dating from the reign of Emperor Kuang Hsu. Among the officers in charge were Chiang Kuei T'i, Chan Hsun and other Han generals, but the political disturbance of 1838 introduced many factions in the court and continual strife between the Manchus and Hans made the situation far from pleasant and exposed the Throne to an attempt of the Hans to remove the person of the ruler. Indeed, upon the death of the late Emperor and Empress Dowager it was found necessary to assign a part of the Sixth Division at Nan Yuan to duty in Peking as the soldiers guarding the Forbidden City were considered insufficient.

The Prince Regent, no doubt, realized that the throne would be more secure with a well organized body directly under his control. One censor is reported to have submitted a memorial in which he pointed out that the imperfect condition of the Palace Guard would increase the audacity of knaves and urged such an organization as the Prince Regent afterwards decided upon. It is expected to give the Prince Regent greater security and strengthen the unsteady political power of the Sovereign in the event of a crisis.

According to the *China Tribune*, the time given for the complete organization of the Imperial Guard of China was two years divided into four periods, and when carried out would consist of a training bureau, two brigades of infantry, one regiment of cavalry, one regiment of artillery, one battalion of engineering corps, one battalion of army service corps, one battalion of machine gun corps, one company of communication troops, one company of railway corps, and a military band, making in all 30,000 men.

The organization for the first period was completed on the 17th of the 9th Moon, this year. This consisted of one regiment of infantry and one regiment of artillery, both selected from the 1st Division stationed at Pei Yuan. The Battalion Commander is Ting Chan. Colonel Whang Wang is a soldier who received modern military education, and occupies a prominent position in the military circles in China. Of late, Gen. Liang Pi became the commander of the brigade, and through his efforts, good results were obtained.

Gen. Liang Pi is one of those military men who sincerely expect to do great things for China's army in the future. A strict man, the general is eager to maintain discipline, and by picking out young officers possessing modern military education and placing them under his command, is endeavoring to modernize his troops. His reformatory, decisive action must be said to be in accordance with the spirit of China for building up a new army.

Later, there was a little change in the special Training Commissioners of the Guard, H. E. Tieh Liang being relieved by Prince Tsai Sou at the time when the Naval Staffs Bureau was established.

It is the purpose of the Prince Regent to make the Imperial Guard the model organization of China's military system. The strength is being selected from men picked from the First Division and the Banner men Class. Care

is taken in the selection of the equipment, and in this particular it is an improvement on the Sixth Division better known as the Pei Yang Army. The present artillery consists of eighteen German guns to which are being added a number of more modern pieces ordered from Germany. Khaki colored cloth is used for summer uniforms and a heavy gray tinted material for winter. The manual of arms is modern and exhibitions of drill impress the visitor with the precision with which commands are obeyed. The soldiers are familiar with the open and close formation. Indeed, the Imperial Guard shows every indication of proving all that the authorities expect of it.

Some criticism might be made of the selection of the cavalry horses and their equipment, but as this is a matter of detail, it no doubt will receive the proper attention in due course.

Although the troops for the first term have been successfully organized in a comparatively short space of time, whether the rest, that is to be formed in the proposed limited period of two years, can be completely made up, equipped, and trained, is a question which can not be answered at the present juncture in confident affirmation. The work consists to organize one regiment of infantry, one battalion of cavalry, one battalion of artillery, one company of engineers, and one company of army service corps, by conscription, and has been going on ever since the 20th of November, it being expected to be completed by the end of the present Chinese year.

Manchuria.—The activity of Russia and Japan in the Eastern Provinces has served to create a feeling of insecurity among the Chinese leaders lest China's authority in that important region be endangered and every effort is being made to so police the territory with Chinese soldiers that there could be no pretext for military occupation on the part of either of these powers. Among the many excuses for the extension of Russian and Japanese police powers in this section of the empire, the depredations of the Hunghutze, or "red beard" bandits, threatening foreign property, has always been the most prominent. It served to cover the organization of a large force of railway police, etc., regardless of treaties and agreements providing for the respect for China's integrity. China believes that the struggle in the Far East between Russia and Japan is almost sure to be renewed. It involves neutral Chinese territory and every move on the part of either power to strengthen her position for the future conflict is realized as an added menace to Chinese authority in Manchuria.

General von der Boeck's opinion is that peace between Russia and Japan cannot be preserved beyond the close of 1912. This is also the opinion of M. Glemser, a member of the Industrial Delegation of the Russian Council of Empire. It is pointed out that the Russian troops now in the Far East aggregate 200,000 on a peace footing and this can easily be increased to 300,000 without drawing from European Russia. The double tracking of the trans-Siberia adds to the force of these conclusions. Vladivostok is being strengthened and the building of the Amur railway is another indication that Russia is in the Far East to remain.

On the other hand Japan is engaged in strengthening her position. Her army has been increased from thirteen to nineteen divisions since the close of the war. It is estimated that on a war footing her army would not number less than 550,000 men and 120,000 horses and this could be increased to a million at short notice in the event of hostilities.

This German authority is imbued with the belief that when the trouble comes China will be forced into the position of ally to Japan. He bases this conclusion on the information, he believes reliable, that the new Chinese National Army is being organized along Japanese lines and drilled by Japanese officers for just such a purpose.

There is reason to believe that China does not desire to be drawn into this struggle and that she is anxious to so assert her sovereignty over Manchuria as soon as her present agreements with Russia and Japan expire, to the exclusion of foreign influence. To be able

to do this, she knows she must have a strong military force backed by a strong central government. During the last few years China has consistently opposed every move designed to ignore her sovereign rights in that territory. She has been relying on the promises of the powers to recognize that sovereignty and while she has reason to doubt the sincerity of some of her professed friends, she proposes to do her part to the extent of her power. Her growing military spirit may be taken as an indication of her policy in that direction. The recent proposal of Secretary Knox has cleared the atmosphere somewhat, and China knows now just how much she may rely upon the agreement of the powers to maintain China's integrity and assist her in maintaining the "Open Door." And so she is providing for the future maintenance of her authority by increasing her forces in the Three Eastern Provinces.

The latest statistics available on China's forces in Manchuria are furnished by the *Golden Moscow* as follows:

"In all three provinces of Manchuria the field troops at present comprise 38 battalions of infantry, 6 divisions of cavalry, 18 artillery batteries with 2½ guns, 1½ battalions of sappers, and 1½ survey companies. The men number 19,153 infantry, 1,344 cavalry, 2,267 artillerymen, 630 sappers, and 630 surveyors, a total of 24,024 regular troops. The reserve comprises the following divisions:—In Mukden province, 16 infantry and 28 horse battalions; in Kirin province, 18 infantry and 15 horse battalions; and in Tsitsihar province 6 infantry and 15 horse battalions, with 1 infantry and 7 mounted battalions sent from Mukden. The total reserve is thus 41 infantry and 65 cavalry battalions. The men number 12,341 infantry and 12,285 cavalry, a total of 24,626. According to the scheme of military reforms in Manchuria it is intended to increase the above reserve strength in time of peace by 22 battalions of infantry, 9 divisions of cavalry, 27 batteries with 135 guns, 3½ battalions of sappers, 3½ battalions of surveyors, the number of men being as follows:—11,078 infantry, 1,916 cavalry, 2,592 artillerymen, 1890 sappers, and 1,890 surveyors, a total of 19,366. In war time this number is to be further increased by 41,328 infantry, 1,916 cavalry, 2,592 artillery, 4,410 sappers, and 4,410 surveyors, a total of 54,656. Thus in the event of war, the Manchurian Army will, according to the scheme, reach 122,672 men."

This number may of course be augmented by the well-drilled Manchuria police. These police have accomplished much in destroying the raiding bands in and about Harbin. The Russian police had endeavored for years to give protection to life and property, but little success resulted until the work was taken in hand by the Chinese police under the direction of H. E. Shih Shao Shi, Customs Taotai of Harbin. These forces are divided into small mounted and dismounted companies. Wherever they have been operating for any length of time they have displayed unusual ability in coping with the lawless element and in the field, as scouts would prove invaluable.

Many incidents of clashes of authority between the Chinese and Japanese officials find their way into print and whether serious or not, is indicative of the zealous spirit of the Manchurian officials in their endeavour to force respect for Chinese authority. For instance, the native papers directed attention to an incident relating to the policing of the Kirin frontier. It appears that General Wu Lu-tseng, Imperial High Commissioner in charge of the Kirin frontier defences, made an arrangement with the Viceroy of Manchuria, Hsi Liang, that he (the former) should bring with him a portion of the army from Moukden to strengthen the frontier guards. Shortly after the conclusion of that arrangement, Viceroy Hsi Liang received warnings from the Wai Wu-pu that the latter had received intimation from H. E. Hu Wei-te, Chinese Minister at Tokyo, to the effect that the Japanese Government had informed said Minister that if China despatches more troops to the frontier, Japan would do the same thing. On the receipt of the above message, Viceroy Hsi Liang at once withdrew the promise which he had made to Lt. General Wu Lu-tseng.

Recently, however, Lieut. General Wu Lu-tseng has wired to Viceroy Hsi Liang that a number of Japanese soldiers had secretly crossed the Tumen River and had gone as far as Lu Tao-kow, on the pretence of replacing their former guards, and that the troops he has at his disposal are unable to cope with the Japanese. He is utterly helpless and asks Viceroy Hsi Liang to despatch troops to his assistance. Hsi Liang is placed in the most difficult position, not knowing what step he ought to take in the matter.

The above would indicate that the local officials in Manchuria desire to maintain Chinese authority but without substantial support from Peking, all their good intentions come to naught.

Viceroy Hsi Liang, who is strongly in favor of a large force for frontier defence, applied to the throne for Tls. 300,000 annually for the

sections of the border province is in this direction and it is noted that Mongol Princes are receiving marked attention from the Prince Regent. The colonizing of Mongolia, by encouraging Chinese from the thickly populated sections of the Empire to settle there and develop the country, is another movement that is receiving Imperial encouragement.

Few statistics are available with regard to the military forces scattered throughout Mongolia, but several authorities are quoted placing the number at about 40,000, all of whom have been drilled by Japanese instructors and armed with modern rifles. All the frontier posts have been strengthened and in Kobdo and Uliasseitai where Russian influence is very strong the government is active in organizing a military force under the direction of a Chinese instructor, a graduate of a German military school.

expedition through to Tibet was undertaken to complete the subjugation of that territory. In connection with this campaign some reference has been made to the arsenal at Chengtu furnishing ordnance and ammunition to the forces upon their advance. A correspondent of the *North China Daily News* writing from Chengtu recently describes these works as employing 350 men and boys and the output 5,000 rounds of ammunition and four rifles of indifferent pattern daily. Describing the establishment the correspondent writes:

"The rifles appeared to be of an indifferent pattern and I noticed the bullets did not fit the cartridge cases closely and were plugged in every case with a slip of paper to make the lead bullet a fixture in the cartridge.

"There are three German employees, but we did not see any sign of them. They seem



OFFICERS OF THE MANCHURIAN FOREIGN-DRILLED ARMY

purpose until the Three Eastern Provinces were independent of outside assistance. He received but Tls. 100,000 out of the Dairen customs receipts.

During the last few years China has undertaken the policing of all the territory outside the railway zones and opposed tooth and nail any interference with her authority. The reconstruction of the Antung-Mukden Railway by the Japanese gave occasion for differences growing out of the policing of the railway right of way, but after some delay in negotiations the matter was adjusted. Several clashes have been reported between the Chinese and Japanese police, but China's sovereignty is recognized and late advices are to the effect that conditions are now satisfactory. The following is a report from Seoul given out by a Japanese attaché of the Residency General at the Chientao Branch:

"According to investigations up to the end of June last, there were 82,999 Koreans, 273,712 Chinese and 250 Japanese merchants in Chientao. The rumoured dispatch of more Chinese troops is a mistake, due to the arrival of Kirin troops who relieved the garrison. The number of the garrison was 3,500, but the figure is thought to be less at present, as many of them left on the expiry of their term. Japan has 2,000 gendarmes and 4,000 Korean police in the place. The situation is peaceful and there is no fear of outbreak though occasional collisions take place."

Mongolia.—The fear of Russian encroachment prevails among the Mongolian princes. Prince of Turgut, who recently returned from Japan where he concluded a course in military training, is a leader in a movement to inaugurate a comprehensive defense of Western Mongolia. Lack of means of communication and of co-operation on the part of the Mongol leaders have been a great drawback to any attempt to join interests in this direction. The new national army scheme does not include Mongolia, but Peking has a well defined plan to encourage Mongolian support. The construction of railway lines connecting Peking with the different

The construction of the railway extension from Kalgan to Kiakhta, it is believed, will strengthen the Imperial interests in Mongolia and give a quicker service to Europe over a line entirely controlled by the Chinese to the border.

It is proposed to establish division headquarters at Hsining, Altaishan, Chahar, Kobdo, Ili and Urga and concentrate all the forces at these points. The development and training of these forces have been very slow for the reason that it was difficult to secure instructors, but recently the Mongols are taking more interest and the scheme as outlined will no doubt soon be greatly advanced. Arrangements have been completed to instal a system of wireless connecting Mongolia and Chinese Turkestan with the land wires in Kansu to bring these outlying regions of the Empire in closer touch with Peking and encourage interest in imperial affairs.

Tibet.—A similar program to that in Mongolia is being carried out with regard to Tibet. The colonizing of the territory is being encouraged, a railway connecting Szechuan and Tibet proposed, and telegraph communication established. With the successful outcome of the recent punitive expedition consisting of 25,000 men under the command of Chao Erh-feng, the Prince Regent has turned his attention to establishing Chinese sovereignty more firmly in that outpost. The conversion of Tibet into a province or the establishment of three provinces to be organized out of Tibet and Szechuan has been proposed and is receiving the consideration of the government. A successor to the Dalai Lama deposed by the Chinese forces has been ordered and great interest is being taken in the selection of a successor. Every effort will be made by the Central Government to reorganize Tibet so as to secure the co-operation and loyal support of the Tibetans in the development of a military force for frontier defence, and especially to resist the encroachments of Russia in that quarter.

The provincial authorities of Szechuan have always had a great deal of trouble with the border tribes and it was for this reason the recent

to be employed in the new works going up. The whole works had the usual Chinese stamp of slipshod, go-as-you-please style about them.

"I noticed an old 1894 pattern of American made Hotchkiss mountain gun taken to pieces and being slavishly imitated. I should imagine it would take them a fortnight to turn out one of these little weapons at double the cost of importing a new and up-to-date pattern.

"I observed the lead, zinc and copper employed and learnt from a communicative foreman that the mixture was not good and that they were unable to prepare good cartridge cases; they gave me a sample.

"The most busy part of the establishment was the mint which was running full plant and time, and turning out over half a million copper coins of 10 and 20 cash per day. They are using zinc, copper (local and American) and lead in the production of the coins. The coin as far as one can judge is of a high standard compared with most of the coins turned out in China and in other provinces.

"The machinery was supplied by Germans, but comes largely from Manchester and Birmingham with a sprinkling from Germany. The new plant will deal largely with the manufacture of a German water-jacketed rapid-firing machine gun somewhat like a maxim. I saw the one specimen they had at the works, which, we were informed, they were going to imitate."

Yunnan.—The building of the railway by the French to Yunnan-fu has been slowly developing a situation, from the Chinese point of view, not unlike that in Manchuria. Native reports, received from time to time from that region, are to the effect that the French have scattered a large force of Annamites along the line of railway in Chinese territory for the purpose of creating dissatisfaction among the natives in the border provinces who are inclined to be revolutionary. These reports are no doubt exaggerated and as gun running has been a popular diversion of adventurers of every nation, it is not improbable that the

French are not by any means responsible for all the encouragement given these people. The provision for railway guards along the line is now the cause of much friction. In the meantime the Central Government is suspicious of French designs on Yunnan. This is the natural outcome of her experience in Manchuria and for the last two years Peking has been endeavoring to strengthen her defences in that province. The Viceroy was instructed to expend Tls. 2,000,000 supplied by the central government last year to defray the expenses of organizing and equipping the two new divisions allotted to that province and to construct a line of forts along the frontier. But the usual delay is noted in securing results. The present Viceroy

governor to report that he is short the necessary funds to take care of the provincial military allotment. In every case an appeal for assistance from the imperial treasury has been refused and there is every indication that official heads will be lopped off for responsibility for failure to provide funds for this purpose. It may be said that this attitude on the part of the Prince Regent is having its effect and as time passes the prospect for more loyal support from the provincial officials in financing the setting up of their quota of soldiers is brighter. It may be expected, however, that not a few examples will be made of viceroys and governors who fail to appreciate what Peking expects of them before the disposition on the part of

to devise ways and means, have made a careful study of the subject. The financing of the project offers many discouragements, but as the plans assume shape there seems to be no lack of increased interest in the project. It might be said that it has been decided to encourage the training of a large number of students abroad and a nucleus for the big naval scheme had been arranged which will consist of cruisers, gunboats and torpedoers, the construction of battleships being deferred until later. Exhaustive plans have been under consideration for the establishment of naval bases, docks, etc., and of naval academies. So far little progress has been made in actual accomplishment.



VISIT OF THE IMPERIAL CHINESE NAVAL COMMISSION TO THE CLYDEBANK SHIPYARD OF MESSRS. JOHN BROWN & CO., LTD.
H. I. H. PRINCE TSAI-HSUN ABOUT TO LAUNCH H. M. S. FOXHOUND.

is moving very slowly. A huge fortified camp in course of construction about seven miles to the north-west of the city of Yunnanfu is after all not to be built just yet. Mountains of bricks and stones are lying about, but the Viceroy will not yet sanction further expenditure. The divisions have been ordered for service in Yunnan and these soldiers will be assisted by provincial forces. The local authorities of Yunnan in policing territory along the border fear conflict with French interests for the reason that the support from Peking in maintaining Chinese authority on the Yunnan border is about as unsatisfactory at the present time as in the Eastern Provinces.

Indeed, on every hand, the Chinese Government finds itself seriously handicapped and humiliated for the reason that her military equipment is far too limited to inspire respect. That this condition will not continue indefinitely there is little doubt. China is awakening, and every time she suffers a fresh humiliation, she renews her efforts in the direction of comprehensive military organization. And she has now the benefit of a growing military spirit among a large majority of the people, where formerly, her situation seemed hopeless.

Finances.—The Imperial Treasury will maintain the Board of War, General Staff, the Imperial Guard, military academies, arsenals and six divisions of the National Army allotted to the Metropolitan Provinces. This represents Tls. 90,000,000 in the budget of which Tls. 25,000,000 will be utilized for uniforms and equipment and an equal sum for arsenals. The balance of the thirty-six divisions are to be provided by the provinces at an estimated expenditure of Tls. 60,000,000 or Tls. 2,000,000 to a division.

The great obstacle in the way of carrying out the army program is the lack of control by the central government of the provincial finances. It is not unusual for the viceroy or

these officials in many sections to plead poverty is overcome.

Military Schools.—There are a large number of graduates from foreign military schools whose services are being utilized in the training of China's future military leaders. These graduates were trained principally in Japan while many are graduates of French, German and American academies. It is stated that the class in Japan in 1908 numbered about 1,000. These graduates are serving as instructors in China's military schools, under the supervision of foreigners, mainly German and Japanese experts. Heretofore, the principal military schools included one each at Tientsin, Wuchang and Nanking. A new one is being built at Taiyuan-fu in Shensi and the establishment of elementary and intermediate schools in the provinces are included in the new program. The Staff College at Peking will provide special courses of training in the different arms of the service and the students will be selected from among the provincial candidates by competitive examination. German drill and Japanese organization prevail throughout the course in all the schools.

Arsenals.—The manufacture of ordnance has been undertaken at the different provincial arsenals. Small arms were turned out at the rate of 50,000 per annum from Wuchang, Te Chou, Canton, Shanghai, Chengtu and Kaifeng Fu. The program provides for the abolishment of the provincial arsenals and the establishment of three large Imperial plants located in the North, Center and South. Of these, the Hanyang Arsenal is the only one in operation. The sites for the other two have been chosen several times but no definite action was taken.

CHINA'S NAVY

The progress made in the reorganization of the Chinese Navy has not been rapid, but there is evidence that the Commissioners, appointed

It will be remembered that an Imperial Decree issued from Peking, July 15, 1909, directed attention to the investment of the authority of supreme command of the Army and Navy in the Prince Regent and concluded with the appointment of Prince Tsai Hsun and Admiral Sah Chen-ping as commissioners to devise means for the Navy Organization. Later, these commissioners made a tour of Europe making study of naval organization and administration.

At this time the existing navy consisted of the Peiyang Squadron having for its bases Chefoo or Taku, the Nanyang Squadron at Nanking or Shanghai, and the Kuangtung Squadron at Canton. These squadrons represented a strength of twenty serviceable vessels, the maximum not being more than 4,000 tons. There were, however, 16 torpedoers, ten river gunboats, twenty-one coast patrols and four training ships carried on the Navy list.

The original program decided upon provided that the first year was to be devoted to reorganize the present force and to place orders for second, third and fourth class cruisers. Improvements were to be planned after careful inspection of the naval bases in the Northern, Southern, Fukien and Kuangtung divisions, and the facilities of the naval schools at Tientsin, Nanking and in Fukien and Kuangtung were to be increased.

It was not until March this year that a definite program for building new warships was announced. On March 24th a contract was given Messrs. Vicker's Sons and Maxim, Burrow-in-Furness, for the construction of an armored cruiser of 2,400 tons, to cost £400,000. Then came the announcement that the first squadron to be built would consist of two cruisers, two defence vessels, two dispatch boats, four torpedo boat destroyers and six torpedoers. Peking has been visited by representatives of almost every large dockyard in the world seeking

a contract, but the order to the British firm is the only one officially announced.

In October, 1909, the announcement was made from Peking that the navy commissioners had decided that orders would be placed for one each of first class, second class and third class cruisers, two training ships, two torpedoers and one gunboat and would cover the expansion of naval strength for a period of four years.

In February this year, upon the return of the commissioners from their tour of the world, they presented a report of their observations to the Prince Regent and recommended that one of the essential steps towards successful reorganization was to send an ample number of students abroad for the necessary training so that as the navy was increased, competent officers would be available to handle it. This seems to have met with general endorsement by the Grand Councilors and the arrangement made by the commissioners while in Europe to send 100 students each to England, France, and Germany for naval training was concurred in. The report was also circulated from Peking that Prince Tsai Hsun had recommended that China's new navy should be modelled after the navies of Great Britain and Germany. This, however, is not conclusive as there is every reason to believe that, as in the reorganization of the army, the Japanese model will be followed generally.

Apparently the delay in placing orders for the construction of new vessels is due to the lack of funds available to carry out even the program for the first period. This program, it is estimated, will mean an expenditure of Tls. 18,000,000. Of this Tls. 1,500,000 goes to the construction of an Imperial Naval base at Hsiangshan and the balance to the construction of the first squadron which is to form the nucleus of the new navy. Divided into yearly allotments it means an annual outlay of Tls. 4,125,000. To this must be added Tls. 2,000,000 for maintenance. Every effort has been made to interest the viceroys and governors in providing the provincial share of this expense and it cannot be said that there is any more enthusiasm over raising the money for the naval appropriations than characterized the interest taken in securing military funds.

In September of last year when the circular note was sent to the different provinces asking for assistance, it is reported that comparatively few replies were received. An encouraging telegram from Hangchow was to the effect that the governor there had undertaken to raise Tls. 1,000,000 and added to this came the news that the provincial treasurer, salt comptroller, grain intendent and the police bureau had agreed to jointly contribute Tls. 230,000 annually. The Hangchow, Ningpo and Wenchow customs were also reported to have subscribed Tls. 20,000 for the same period.

In October, the Ministry of Finance advised the Throne that it was impossible to raise the Tls. 18,000,000, and reported that altogether with the maximum estimate of help expected from the provinces the Ministry was Tls. 2,000,000 short. A curtailment of the original program was suggested, but this was turned down. Subscriptions were encouraged from Chinese subjects residing in foreign countries with, it is reported, some success. It now appears, according to a later report, that while the viceroys and governors have pledged themselves to contribute their respective shares of the Tls. 18,000,000, only Tls. 500,000 have been remitted to the Ministry of Finance. The apparent failure to realize promptly the initial expenses of an extended naval program offers limited encouragement for the carrying out of the more expensive undertakings to follow if China is to have a modern navy. There is prospect, however, that the patriotism of the Chinese will be more deeply stirred as the pur-



PRINCE TSAI-HSUN'S VISIT TO THE VULCAN SHIPBUILDING WORKS AT STETTIN, GERMANY. GENERAL YIN CHANG, THE NEWLY APPOINTED WAR MINISTER FOR CHINA, IS AT THE PRINCE'S RIGHT IN THE LAST PICTURE

pose of the government is discussed and with a well defined purpose on the part of the Prince Regent to assume more and more control of provincial affairs including finance, there is hope for better results. The impression is gathered from many Chinese sources that the success in financing this project will be measured by the success met in establishing a central representative government for the Empire.

Commenting on this phase of the reorganization movement, the *Pall Mall Gazette* says: "It was not without substantial reason that the Chinese Naval Commissioners, who recently visited England and one or two other European lands, adopted a strictly non-committal attitude when asked if orders were shortly to be placed by China. They lacked the power of the purse. The naval mission on its return will find that, while the idea of a new and powerful Chinese navy still holds the popular imagination, the Ministers at Peking are hopelessly asking each other where the money for its construction is to come from." Indeed, it would seem that the *Gazette* was not far from the truth.

The reorganization of the Haichuan Naval Department which was in existence from some time before the war with Japan with its office at Tientsin is to be undertaken, and the office changed to Woosung or Shanghai. Other naval departments are to be established at Fukien, Canton, Kiangsu, and Chekiang. The viceroys and governors of these provinces will have the official title of Associate Naval Commissioners. The old dockyards at Foochow are to be extended and a central naval machine shop located at Tientsin. Regarding Chinese naval schools, provision has been made for the organization of these institutions in the different provinces from provincial funds. One school will be supported by Chihli, Shantung and Manchurian provinces and another by the provinces of Kiangsu, Chekiang, Fukien and Kuang. An academy and special schools are to be established by the Navy Department in Peking.

A Chinese student, being educated in Great Britain, writing for the *China Gazette*, expresses the opinion that there is little prospect for the New Navy or progress in other lines until a representative government is established at Peking and the Empire is more united in purpose. He is very pessimistic over the situation in China. He believes that despite all the pronouncements, edicts, declarations of reform, etc., that China is no better, if not worse, than she was at the time of the Boxer trouble. The finances have been going from bad to worse and the nation is getting deeper and deeper into debt every year and the people find it harder to make a livelihood. He places the cause of failure to the disorganization of the Government and the corruptions of the mandarins, all of which he terms a "rotten foundation" upon which to build any real and lasting structure of reformed government or administration. "China," he writes, "has had enough theorizing and preaching, and now she needs men to put their thoughtful words into active action. What China wants today is 'deeds, not words.'"

With reference to the organization of the navy he points to the necessity of this force to maintain the integrity of the empire and ensure not only its peace, but the protection of its commercial rights. He regards the expenditure as a very small insurance premium on the interests protected. He then proceeds to review the history of naval development throughout the world and especially of the relative value of the Chinese and Japanese navies previous to the war between the two countries, followed by the decadence of the former and the rapid growth of the latter after its close. The victory of the Japanese he ascribes to the fact that they gave every indication that they grasped the essential features of success at sea by providing modern equipment. They had rapid fire ordnance and their vessels had greater speed than the Chinese. On the other hand, the hopeless inefficiency and corruption and the general disorganization of the government, together with the out of date equipment of the fleet, brought to the Chinese terrible disaster.

The *Gazette* correspondent, however, places the importance of reform in the government before attempting the successful reorganization of army or navy. In closing a very strong presentation of China's present unhappy position, he says:

"Regarding the needs of a modern navy, such as building of ships, their designs as well as their special materials, dockyards, and stations, and the provisions which should be sufficiently made for their maintenance and upkeep, and for the training of men and officials to handle them, these are matters which require serious consideration, great experience, and special study. But above all there is the most difficult question of 'how to find the necessary funds' in order to commence this naval re-organization. This question can never be satisfactorily answered until a representative Government is established."

According to the *Navy League Annual* for 1909, the Chinese Navy's strength included but six protected cruisers and two torpedo gunboats as follows:

(1) Protected Cruisers.

Haichi (1898) 4,300 tons. I.H.P. 17,000 = 24 knots. Armament: 2 8-in. q.f., 10 4.7-in. q.f., 22 small q.f. and 5 torpedo tubes. Coal capacity 300 tons.

Haishen (1898) and Hai-Yung (1897) 2,903 tons. I.H.P. 8,000 = 20 knots. Armament: 3 6-in. q.f., 8 4-in. q.f., 12 small q.f., and 3 torpedo tubes. Coal capacity 500 tons.

Nanting (1883), Nanshin (1884) and Hi-Ying (1889) 2,165 tons. I.H.P. 2,400 = 15.18 knots. Armament: 2 8-in. q.f., 8 4.7-in. q.f., 9 machine, and torpedo tube. Coal capacity 600 tons.

(2) Torpedo Gunboats.

Kien-Wei (1900) and Kien-Gnan (1899), 861 tons. I.H.P. 7,000 = 22.25 knots. Armament: 1 3.9-in. q.f., 9 small q.f., and 2 torpedo tubes. Coal capacity 360 tons.

Besides the above on the list may be found a training ship, a corvette and eight torpedo boats in the First Cruiser fleet and nine gunboats, a transport and two corvettes in the Second Yangtzekiang Fleet. The *China Tribune* publishes the following list:

THE FIRST CRUISER FLEET.

Class	Name	Tonnage	Horse Power.
Cruiser	Haich'i	4,300	17,000
Same	Haijung	2,950	7,500
Same	Haich'ou	2,950	7,500
Same	Haich'en	2,950	7,500
Training ship	Tungchi	1,900	1,600
Torpedo Gun Boat	Feiying	850	5,500
Corvette	Paomin	1,500	1,900
8 Torpedo Boats.			

THE SECOND YANGTZEKIANG FLEET.

Gun Boat	Chienan	571	7,000
Same	Chienwei	871	7,000
Corvette	Wanch'en	1,905	2,400
Same	Chingching	2,100	2,400
Gun Boat	Ts'etien	400	66
Transport	Tengleichou	1,285	152
Gun Boat	Chiangyuan	525	920
Same	Chianghsiang	525	920
Same	Chiangli	525	920
Same	Chiangchen	525	920
Same	Ch'utung	740	1,350
Same	Ch'uchien	750	1,350
Same	Ch'ukung	445	1,350
Same	Ch'ukuan	740	1,350

NEW TURRET TOOL POST

The Lodge & Shipley Machine Tool Company, Cincinnati, U. S. A., has recently designed a new turret tool post, illustrated in the accompanying half tone. This turret tool post is made for each size of Lodge & Shipley lathe and is a great time saver on certain jobs where the parts manufactured permit the use of several tools.

The principal features of this new design are that the tools can be set diagonally as well as

square with the cross slide, thus giving eight positions of the turret; that each tool is clamped well forward of the center so as to give the firmest possible support; and that the clamping of the binder lever does not appreciably change the position of the tool.

The lower block of this attachment is interchangeable with the compound rest slide and is fitted to the carriage dove tail by taper gib. A vertical stud is secured in this base and passes up through the turret to carry the binder lever at its top.

The tool post is of steel. Each one of the four tools rests upon a serrated and hardened bolster or rocker, against which it is held by two hardened cap screws. By rocking the bolster in its curved seat, adjustment in the height of the point of the tool can easily be made. When the screws are tightened the position



NEW TURRET TOOL POST.

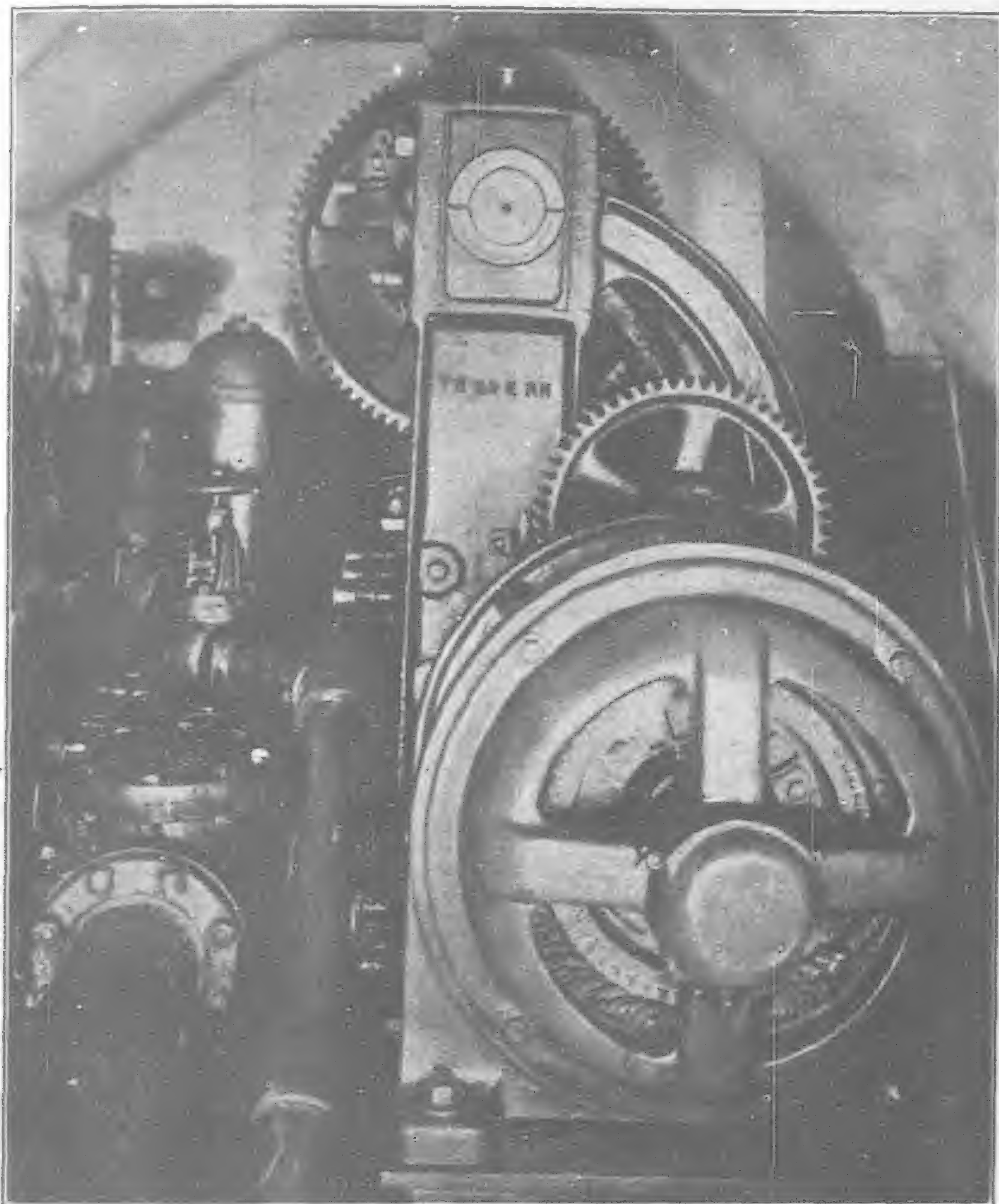
of the tool cannot change because before the bolster could slip, one or the other of the cap screws would have to be loosened to allow one of the bolster to rise.

The turret revolves on a taper bearing concentric with the vertical stud, but does not touch the stud. A bushing is slipped over the stud and this bush is tapered to fit the bearing of the turret. An adjusting nut is threaded to the stud and bears against the upper end of the taper bushing; by tightening this nut the bushing can be so pushed down that there will be no play in the bearing and yet the turret will revolve freely. The large collar between the binding lever and the turret covers the end of the taper bushing and its adjusting nut so that no chips can get into the bearing. The taper bearing is placed with large diameter at the top; thus the turret is at all times held to the horizontal bearing against the lower block and when the binder is clamped the position of the turret and tools remains unchanged.

The turret is exactly located in any one of the eight positions by a locking bolt dropping into notches of an index ring. The locking bolt is withdrawn by the handle at the front of the lower block. Take-up for the bearing of the locking bolt is provided by a taper gib. A coil spring holds the locking bolt against the index ring so that it will at once drop into the notch when the proper point is reached. A screw shown in the illustration just beneath the end of the locking bolt provides adjustment for tension of this coil spring.

REMARKABLE PERFORMANCE OF INDUCTION MOTOR

The performance of apparatus under exceptional circumstances reveals the weak or strong points in its design, and its suitability for the service for which it has been installed. Due to the fact that reliable manufacturers design their apparatus with a large factor of safety, remarkable records are sometimes made.



20 HP. THREE PHASE, 220 VOLT INDUCTION MOTOR DRIVING PUMP IN MINES AT RICHMOND FURNACE, MASS., INSTALLED BY THE GENERAL ELECTRIC COMPANY.

A 20 H. P., 3 phase, 220 volt standard induction motor made by the General Electric Company recently demonstrated the ability of the standard motors manufactured by this company to operate successfully under the trying conditions met with in mines where the air is very damp, without their being totally inclosed. This is of great importance, as thorough ventilation of the motor is absolutely necessary due to the high temperatures which prevail in mines. This motor is geared to a mine pump, located at the bottom of the shaft at the mines of the Richmond Iron Works, Richmond Furnace, Mass., and is installed in a chamber where the air is always very damp and moisture is continually dripping from the roof timbers. It is protected from this water by a piece of tarred paper tacked above it, so as to conduct the water away.

During a heavy thaw last January the surface water broke in on one of the upper levels and flooded the mine. The water rose so rapidly that the electric pump was soon under water, the top of the motor being two feet below the surface. Under such circumstances it was imperative that the pump should continue in operation as long as possible, and so it was not shut down. It continued to operate perfectly and at the end of two hours, during the whole of which time the motor was submerged under water, it had pumped itself clear of water. It was then stopped only long enough to clean the dirt and chips from around the rotor and put oil in the bearings, and then was started up again. This pump has been running about 20 hours a day ever since and the motor has apparently suffered no injury from its unusual experience.

EXTENSION OF THE KOWLOON DOCKS OF THE HONGKONG & WHAMPOA DOCK COMPANY, LTD.

The enterprise of The Hongkong & Whampoa Dock, Co., Ltd., in keeping pace with the modern developments along shipbuilding lines, was recently demonstrated by the completion of the extension of their No. One Dock which increased the dimensions from 576 feet to 700

years' activity in construction under most adverse conditions, the cutting being made from solid granite and involving the removal of one side of the hill at Kowloon to complete the work.

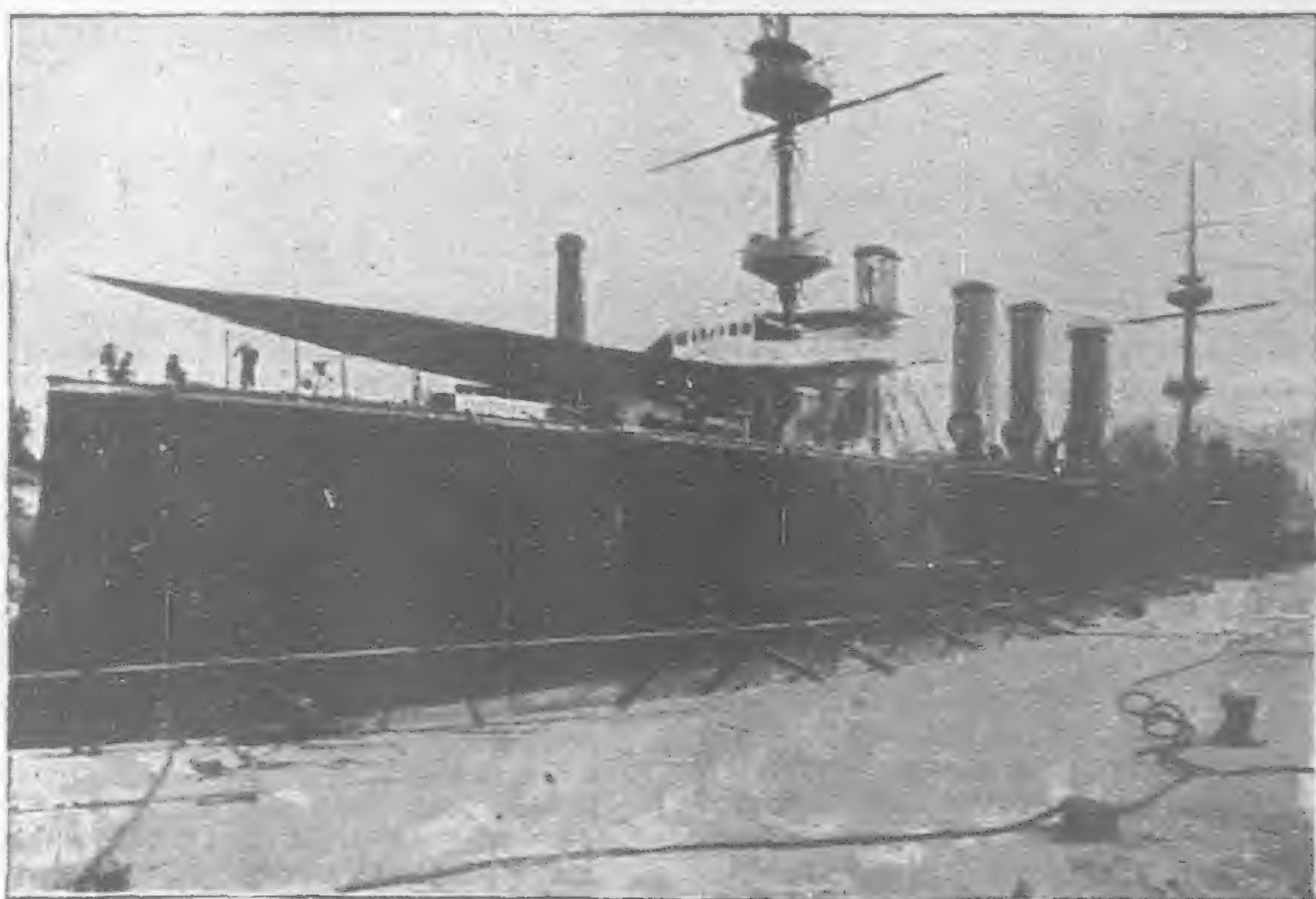
But the extension of the dock is not the only feature in increased activity that has characterized the policy of the present management. Other departments of industrial adventure have been added to meet the growing demands of the colony along general engineering and structural lines. The splendidly equipped Kowloon and Cosmopolitan Workshops have been receiving special attention and today in the Far East no more complete and up-to-date plant may be found for the undertaking of all classes of construction and general engineering, iron and steel forgings, iron, brass and bronze castings, and electrical work of all descriptions.

Particular reference should be made at this time to the railway supply department in which particular attention is being paid to the construction of railway passenger carriages. Indeed the Hongkong & Whampoa Dock Company, Ltd., has the distinction of undertaking the first contract for the construction of passenger carriages in the colony of Hongkong, which was placed with the company by the Kowloon-Canton Railway for the equipment of the British and Chinese sections, a large order and one that will no doubt be followed by many others from different parts of China as the railway building program progresses.

Another modern department of this company that furthers home industry in the colony is that devoted to the construction of main and auxiliary machinery and boilers for marine and land purposes. The advantages of these shops may be appreciated in view of the fact that the usual delay in procuring the above product from the home market is overcome and much time saved in addition to the advantage of more satisfactory service and facilities for prompt installation, etc.

At the several establishments involved in the extensive plant of the company the construction of steamboats, tugs, paddle and stern wheelers, launches, etc., comprise a large part of its operations and the general character of the output has brought the company an enviable reputation throughout the world. And in this department, the company keeps abreast of the times as may be gathered from the special attention paid to the construction of high speed motor boats for passenger and cargo traffic the demand for which has been steadily increasing during recent years.

With the opening of the railway to Canton the trade of the port will be given a marked impetus and with improved transportation facilities the docks will be in a better position than ever to participate in the colony's prosperity. The location of the extensive plant in the vicinity of the site for the general terminus at Kowloon and the introduction of sidings will place the Hongkong Whampoa Dock Co., Ltd., in a most desirable position to develop increased trade and serve its patrons with dispatch.



H. M. S. POWERFUL IN NO. 1 DOCK OF THE HONGKONG AND WHAMPOA DOCK COMPANY, KOWLOON.

CONTRACTING NEWS

CONTRACTS AWARDED.—Municipality of Shanghai.—Electrical Material.—The following is the announcement of the *Gazette*:

Of the tenders received for items 1-6 of Notification No. 2020, the lowest tender for the first five items, that of Messrs. Johnson & Phillips is accepted, for the sum of £2,035.2.6 c.i.f.

The lowest complete tender for item No. 6, 900 High Candle Power Metallic Filament Lamps, is that of the Siemens Schuckertwerke for £241.5s, and acceptance is approved in accordance with the Engineer's recommendation.

The remaining tenders are as follows:—

(a) Nos. 1-5, Tenders for Electric Cable, Junction Boxes, etc.

	£	s.	d.
Jardine, Matheson & Co.	2,190	19	6
Dodwell & Co.	2,287	17	6
Shanghai Electric & Asbestos Co.	2,415	10	8
Brighten, Malcolm & Co.	2,424	10	0
Inniss & Riddle	2,442	8	0
Collins & Co.	2,450	5	0
Von Doring, Wibel & Co.	2,534	1	4
Arnhold, Karberg & Co.	2,536	0	0
British Insulated & Helsby Cables	2,561	9	6
Siemens Schuckertwerke	2,672	13	4
W. T. Henley's Telegraph Works	2,707	10	0
Dickeson, Jones & Co.	2,726	15	0

(b) No. 6 High Candle Power Metallic Filament Lamps.

	£	s.	d.
Arnhold, Karberg & Co.	245	0	0
Brighten, Malcolm & Co.	260	0	0
Dickeson, Jones & Co.	313	0	0
Jardine, Matheson & Co.	374	8	0
Dodwell & Co.	398	5	9
Shanghai Electric & Asbestos Co.	401	6	0
Inniss & Riddle	407	0	0
Collins & Co.	508	10	0
British Insulated & Helsby Cables (part only)	148	0	0

FIRE-HOSE.—Of the tenders received for the annual supply of fire hose for the Fire Brigade in accordance with Notification No. 2028, it is decided, says the *Gazette*, upon the recommendation of the Chief Engineer, to accept the tender of Messrs. Shewan, Tomes & Co., £319, for hose manufactured by Messrs. Shand, Mason & Co., London. The remaining tenderers were:

NAME	MANUFACTURERS	2000 ft. Rubber lined fire hose	2025 Cotton fire hose
Melchers & Co.	Lewall, Freiberg	114 0.0	58 8.0
Dodwell & Co.	—	150 0.0	60 10.0
Frazar & Co.	Fleming, Birkby, etc.	188 13.4	68 18.2
Collins & Co.	do	189 0.0	70 0.0
China & Japan Trading Co.	—	194 0.0	97 0.0
Arnhold, Karberg & Co.	—	195 0.0	72 2.0
Melchers & Co.	Meiswinkel, Essen	209 0.0	50 10.0
Rose, Downs and Thompson	—	221 8.0	62 8.0
Rose, Downs and Thompson	—	—	53 16.0
Andersen, Meyer & Co.	—	242 0.0	119 15.0
Ilbert & Co.	—	257 10.0	76 14.6
Evans & Co.	Rob Roy	228 0.0	116 0.0
Westphal, King & Ramsay	Diamond Rubber Co. & Bentham, Lanc.	292 15.8	66 15.0
Inniss and Riddle	Geo. Angus & Co.	336 0.0	91 10.0
Westphal, King & Ramsay	Diamond Rubber Co. & Bentham, Lanc.	373 13.6	70 10.0
Dunlop Rubber Co.	Dunlop Rubber Co.	383 10.0	81 10.0
Dickeson, Jones & Co.	—	390 0.0	85 1.0
Melchers & Co.	Merryweather	434 0.0	134 16.0
Anderson, Meyer & Co.	do	455 0.0	145 10.0
Markt & Co., Ltd., (Shanghai)	Eureka	G. \$1,550	G. \$410
Fobes & Co.	American Rubber Mfg. Co.	Tls. 2,400	Tls. 621
Shanghai Electric & Asbestos Co.	Bowers Rubber Works	2,580	871
J. W. Gande & Co.	Gorham Rubber Co.	2,995	936
Chang Dah Yuen	—	3,000	350
Fearon, Daniel & Co.	Gorham Rubber Co.	3,030	845
Sam. McGregor & Co.	Willcox & Co., etc.	£275 0.0	
Jardine, Matheson & Co.	N. Brit. Rubber Co.	421 0.0	
Jardine, Matheson & Co.	Merryweather	465 0.0	
Scott, Harding & Co.	No. 1	Tls. 2,307	
Scott, Harding & Co.	No. 2	2,379	
Scott, Harding & Co.	No. 3	2,404	
Scott, Harding & Co.	No. 4	2,543	
Scott, Harding & Co.	No. 5	2,606	

BUREAU OF SUPPLY, MANILA.—40,000 barrels of cement.—Awarded Messrs. W. H. Anderson & Company, Green Island.—Bids published previously.

U. S. ENGINEER CORPS, U. S. A.—5,500 windows and doors for concrete buildings on Corregidor Fortifications.—Awarded the Cadwallader-Gibson Company. Approximately ₱45,000.

BUREAU OF PUBLIC WORKS.—Construction of bridge of reinforced concrete of two 80-foot spans over Tanjay River, Oriental Negros. Bids submitted, F. D. Harden, ₱29,470, and A. Luraschi, ₱23,700. These amounts do not include the supply of structural steel.

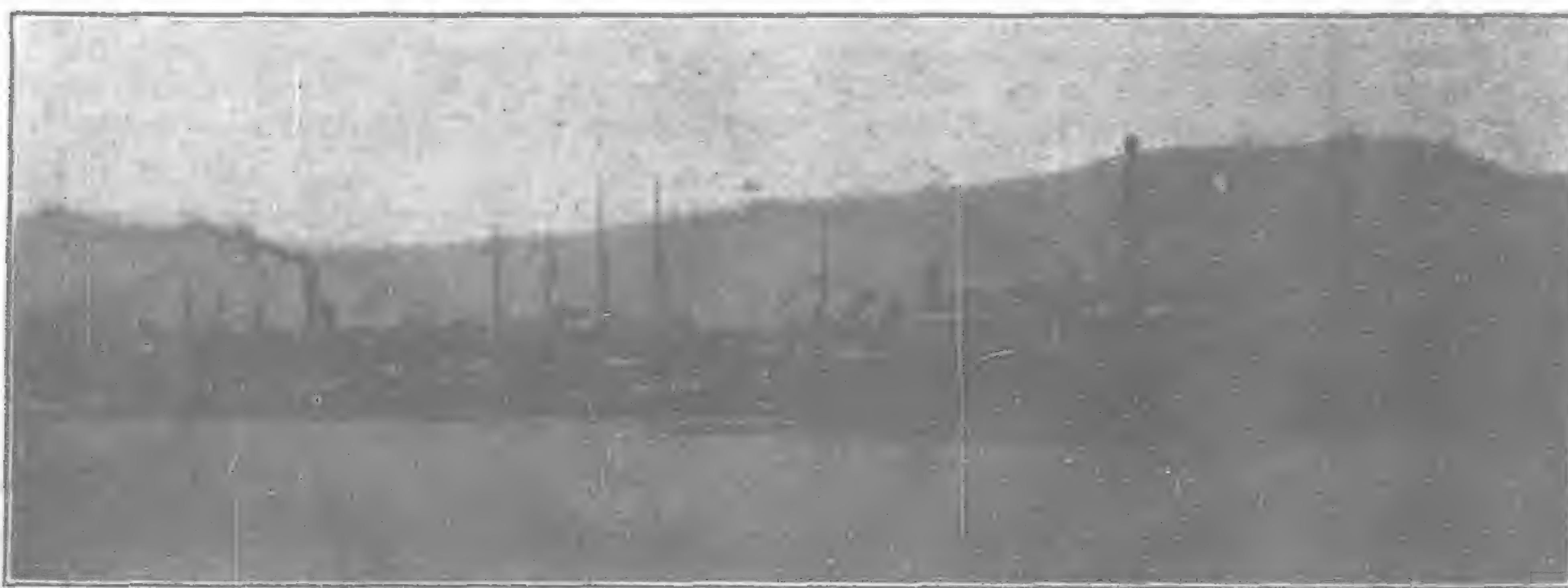
PROPOSALS INVITED.—Electricity Department, Municipality of Shanghai.—The Council is prepared to receive tenders for the supply and delivery of:—

- (1) 5 miles 7-10 Standard wire gauge hard drawn bare copper cable.
- (2) 5 miles $\frac{3}{4}$ Standard wire gauge hard drawn bare copper cable.
- (3) 1 mile 7-6 Standard wire gauge hard drawn bare copper cable.
- (4) 1000 single pole, 50 ampere, 200 volt, house service fuse boxes.

Detailed specifications and further information may be obtained upon application to the Electrical Engineer, Mr. T. H. U. Aldridge, Electricity Works, Fearon Road. A charge of Tls. 5 will be made for specification which will be returned upon receipt of a bona fide tender.

Sealed tenders in duplicate will be received by the undersigned not later than noon on Wednesday, September 14, and should be marked "Tender for Electrical Material."

PROPOSALS FOR FRESH VEGETABLES.—Headquarters Philippines Division, Office Chief Commissary, Manila. Sealed proposals in triplicate, subject to usual conditions, will be received at this office until 11 o'clock a. m., October 1, 1910, at which time and place they will be opened in the presence of attending bidders, for furnishing and delivering to the Subsistence Department, U. S. Army, Manila, P. I., such quantities of fresh potatoes and onions as may be required from time to time during period from November 1, 1910, to February 28, 1911. About 600,000 pounds potatoes and 120,000 pounds onions will be required per month. Each proposal must be accompanied with a sample of about ten pounds each of the potatoes and onions which it is proposed to furnish, also with a bidder's guaranty in the amount of \$5,000.00 or with certified check for that amount on a bank of approved standing in Manila. The bidder to whom award is made will be required to give bond the penalty of which will be fixed by the Chief Commissary. Blank forms, specifications, and all necessary information can be obtained on application to this office. Envelopes containing proposals should be marked "Proposals for Fresh Vegetables."



Reproduced from *The Timberland*.

BRITISH STEAMER "KNIGHT OF THE GARTER" RECEIVING CARGO AT THE EASTERN AND WESTERN LUMBER COMPANY.

LARGEST LUMBER CARGO EVER SET AFLOAT DISPATCHED TO CHINA

Undoubtedly the largest lumber cargo ever set afloat, was that carried from Portland on the British steamship *Knight of the Garter*, which cleared from this port June 9, says *The Timberland* of Portland, Oregon. The cargo consisted of 5,010,608 feet, and was supplied by the Eastern & Western Lumber Co., 3,546,215 feet;

Clark & Wilson Lumber Co., 1,083,345 feet; Peninsula Lumber Co., 381,048 feet, the total being 5,010,608 feet. The cargo is consigned to Taku Bar and Shanghai, China. The *Knight of the Garter* is 475 feet long, 54 feet 10 inches beam, 33 feet 10 inches depth of hold. She was built in Glasgow, Scotland, in 1892, and has a displacement of 10,600 tons. She was drawing 25 feet when she sailed from Portland. The cargo was dispatched by the China Import & Export Lumber Co.

FAR EASTERN RAILWAY NEWS

INDO-CHINA RAILWAYS.—The *Saigon Opinion* is quoted as stating that the colony needs, first of all, drainage and irrigation as the most urgent railways have already been constructed, that the only line necessary at present would be one extending to the navigable stretch of the Mekong below Vientiane, and that all future railway schemes should receive the most careful study before proceeding to construction. This comment had reference to the new loan of 200,000,000 francs for public works.

RAILWAY BRIDGES FOR SIAM.—The contract for the steel work of fifteen bridges for the Royal Siamese Railways has been placed with the Cleveland Bridge and Engineering Company of Darlington. These bridges are to be erected along the line of the Siamese section of the Peninsular Railway, included in the scheme proposed in the recent Anglo-Siamese treaty. The spans of these bridges will run from 30 to 250 meters and the contract covers the most important bridge construction.

to be opened October 1, 1910," and addressed to the under signed.—D. L. Brainard, Lieut. Col., D. C. G., U. S. Army, Chief Com's'ry.

BUREAU OF CONSTABULARY.—Office of the Chief Supply Officer.—Sealed proposals in triplicate, subject to the usual conditions, will be received at the office of the Chief Supply Officer, Bureau of Constabulary, Old Oriente Building, Manila, until ten a. m., October 15, 1910, and then opened in the presence of attending bidders, for furnishing the Bureau of Constabulary the following articles:

1,800 Mosquito bars.

3,000 Shoulder knots.

4,000 Water-proof capes and hoods, coats or ponchos.

Bids must be accompanied by samples.

Time for delivery to be stated on proposal and to be considered in awarding contract.

Samples of mosquito bars and shoulder knots may be seen and blank proposals obtained at the office of the Property Officer, Bureau of Constabulary, Old Oriente Building, Manila.

BUREAU OF PUBLIC WORKS, MANILA.—Cebu Water Works.—Sealed bids will be received by the Director of Public Works until 11:00 a. m., November 15, 1910, and thereupon opened, for the furnishing of material for and the construction of Osmeña Water Works System for the Municipality of Cebu, Cebu, Philippine Islands.

The proposed works will consist of a circular reinforced concrete dam with intake appurtenances and valve chamber; a concrete spillway; a 4,000,000 gallon reservoir in excavation; a 14" and 16" main pipe line six and a half kilometers long; a distribution system 4" to 14" diameter pipe twenty-one (21) kilometer long; and the necessary gates, valves, valve boxes, fire hydrants, and appurtenances.

Specifications, general plans, and blank forms of proposal may be obtained at the office of the Director of Public Works, Manila, P. I., and from the office of the District Engineer, Cebu, P. I.

Each proposal must be accompanied by a certified check for 10% of the amount of the bid drawn by the bidder on a local bank and made payable to the Insular Treasurer as a guaranty that the bidder, if awarded the contract, will, after due notification, promptly enter into contract and furnish acceptable bond in the sum of twenty (20) per cent or a certified check for ten (10) per cent of the sum total of the contract price for the faithful performance of the work.

The right is reserved to reject any and all bids or waive informalities.

CLARENCE W. HUBBELL,
Acting Director of Public Works.

THE YELLOW RIVER BRIDGE AT TSINANFU.—The construction of this important bridge of the Tientsin-Pukow Railway is progressing very satisfactorily and it is expected that the work will be completed the latter part of next year. The contract was let to the Augsburg-Nurnberg Machine Manufacturing Company who have a contract covering 100 additional steel bridges of 60 tons each and in the development of the construction work electricity has been utilized most successfully. This large undertaking has involved a large expenditure for plant including transportation facilities and equipment for the manufacture of concrete piles which is one of the features of this construction. Some idea of the bridge may be gathered from the fact that there are twelve piers in all the three center ones supporting sections 128, 165 and 128 meters in length and the balance averaging 91 meter spans. The bridge will be 9.40 meters in width.

THE TAITO RAILWAY.—The Japanese Government has provided the sum of yen 4,250,000 for the early construction of the branch railway at this point.

NEW APPARATUS FOR DISINFECTING CARS.—The Consular Reports quote the Consular Agent of Sorau respecting a new process in vogue on the Prussian State Railways as follows:

"The former method of cleaning cars infected with vermin cost \$85 per car, while by the new method whole railway trains can be cleaned in a few hours at a cost of \$8.50 per carriage. The new apparatus consists of a steel tube laid parallel on the ground and having a diameter of 16 feet 4 inches and a length of 75 feet 4 inches. When a carriage is to be disinfected all doors and windows are opened and the carriage pushed into the apparatus. The tube is then closed and made air-tight and the air heated by means of steam pipes to 122° F. Then, as the temperature in the tube is constantly increased, the air is pumped out until the atmospheric pressure falls to 13½ pounds per square inch. This draws all life from the vermin, also from the spawn under the cushions or behind the woodwork, and their death made absolutely certain. When it is desired to cleanse the carriage not only of vermin, but also of infectious germs, an evaporator filled with formalin is placed in the center of the tube."

SUPPLY OF RAILWAY MATERIALS FOR INDIA.—According to *Railways*, Messrs. Burn and Company, Limited, Howrah, recently booked for the Eastern Bengal State Railway, 40 girders, 30 feet and 40 feet spans and a terminal pontoon for the dredger *Alexandra*. Messrs. Ransomes and Rapier, Limited, Ipswich, have supplied the Assam-Bengal Railway with turning gear for cranes, manufactured at their Waterside Iron Works; and Messrs. Hayward, Tyler and Company, Limited, spare parts for a fire pump; and Messrs. Pooley and Sons, Limited, spare parts for weighbridges. Messrs. W. T. Avery, Limited, the well-known makers of weighing apparatus had an order for the supply of weighing machines. Messrs. Gillanders, Arbuthnot and Company, Calcutta, have the order of the East Indian Railway for the supply of 12,000 cwts. of round Padouk timber logs and 3,120 cwts. of square Padouk timber logs. This colonial timber is very suitable for railway carriage and wagon building.

Messrs. Jessop and Company, Limited, Calcutta, supplied a Tangye's duplex centre packed Ram type steam pump (20 inches by 8 inches by 10 inches) to the North-Western State Railway. Messrs. Gillanders Arbuthnot and Company have supplied the Eastern Bengal State Railway with 14,000 cwts. of Indian Teak Squares. The Engineer-in-Chief, Lower Ganges Bridge Project, Sara, has given a further order to Messrs. Burn and Company, Howrah, for the construction and supply of six 100-ton cargo boats. Messrs. Burn and Company have obtained an order to supply the South Indian Railway Company with four bridges. The East Indian Railway Company have placed with them the order for iron and steel work complete for two 30-ton gantries, including

one winch for each gantry, for Mankatha station, Dinapore district. Messrs. Steel, Peech and Tozer, Limited, had an order from the South Indian Railway for the supply of steel axles for rolling stock, and Messrs. Taylor Brothers, Limited, had a large order for the supply of steel tyres for rolling stock. Messrs. Jas. Reid and Company, Limited, had a contract for the supply of pig-iron to this Railway. The Bengal Iron and Steel Company, Limited, we may mention casually, are manufacturers of large quantities of "Pig" at their Barakur Iron Works, and supply the East Indian Railway and also other Indian lines. Messrs. Lawrence, Scott and Company, Limited, Norwich, had an order for the supply of electric motors and cables to the East Indian Railway, Electrical Department. Mr. W. B. Peat, Receiver and Manager for the Debenture Holders of Messrs. Robert Stephenson and Company, Limited, Darlington, had a large order for the supply of spare or duplicate parts for locomotive engines to the East Indian Railway. The British Insulated and Helsby Cables, Limited, Prescott, Lancashire, have supplied a quantity of electric fittings to the same Railway. Messrs. Callenders Cable and Construction Company, Limited, had quite a large order for the supply to this line of insulated cable and bar wire. Messrs. Dorman Long and Company, Limited, the Middlesborough Structural Engineers, etc., have in hand the rolling of 5,563 tons of bull-headed steel rails, while the Patent Shaft and Axletree Company, Limited, had the order for the supply of the steel fishplates, and the Anderston Foundry Company, Limited, the steel fishbolts and nuts. Messrs. P. and W. Macellan, Limited, Cannon Street, London, E. C., and Clutha Ironworks, Glasgow, are supplying the under-frames and other ironwork, etc., for 120 covered goods wagons to the East Indian Railway. The Gloucester Railway Carriage and Wagon Company, Limited, are supplying the same railway with the ironwork, etc., for two sheep vans, ten general service brake vans, and six mineral brake vans. Messrs. B. and S. Massey, Limited, Openshaw, Manchester, were supplying the Bengal-Nagpur Railway with a piston and rod for a two-ton steam hammer, and Messrs. Nasmyth, Wilson and Company, Limited, Bridgewater Foundry, Patricroft (near Manchester), a piston and rod for a ten-ton steam hammer. Messrs. Allen and Everett and Sons, Limited, have supplied the same railway with 2,172 brass boiler tubes for locomotive engines. The Patent Axlebox and Foundry Company, Limited, had an order for the supply of 8,500 axleboxes for rolling stock and the Monk Bridge steel and Iron Company, Limited, for the supply of 500 steel tyres for rolling stock. The Birmingham Railway Carriage and Wagon Company, Limited, have a large order for the supply of duplicate parts for carriage and wagon stock, and Messrs. Steel, Peech and Tozer, Limited, for the supply of 71 steel axles to the same railway.

KOREAN RAILWAY CONSTRUCTION.—Director Ohya of the Railway Bureau at Yongsong states that the surveying work, both on the Honam and the Seoul-Wonsan lines, was begun last April and is now in progress. On the latter line the survey has reached 30 miles from Seoul and of this, final location had been reported for a distance of over 20 miles or to Euichongpu and work is underway on the construction. Of the Honam line there are over 20 miles ready for the actual work. Little engineering difficulties are presented on this latter line, but the Seoul-Wonsan would pass through some difficult mountainous country. It is reported that the Antung-Kekwang section of the Antung-Mukden (50 miles) will be finished in November. Of the 34 miles of the Pongyang-Chinampo line 24 miles have been laid with steel and sixteen miles were operating and it is expected that the formal opening will take place in November. The Director announced that, by the end of the year 1912, it was expected that the lines of the peninsula and the Antung-Mukden would be completed and through service established between Mukden and Tokyo thus connecting Tokyo direct with Paris.

MONEY FOR THE TIENSIN-PUKOW.—The President of the Board of Posts and Communications has advised that he will appropriate the necessary money from the profits of the Imperial Railways of North China to cover the cost of construction on the Northern Section until the supplementary loan may be arranged.

RUSSO-JAPANESE FREIGHT TRAFFIC TREATY.—Councillor Kinoshita, of the Japanese Railway Board, is at present in St. Petersburg attending the negotiations for the conclusion of freight agreement in connection with their respective railway interests.

RAILWAY FROM KALGAN TO JEHOL.—A Peking dispatch is to the effect that Tls. 3,000,000 have been raised by the Viceroy of Chihli and the Railway Board to defray the cost of this line.

KIANGSI RAILWAY.—The section of this railway, 16 miles between Kuikiang to Wanyiwan, was opened to traffic July 18.

MANILA-LOS BANOS RAILWAY.—This branch of the Manila Railway Company was opened to traffic on August 6th and now the run brings the residents of the capital within two hours of the famous medicinal springs. The construction of the main line southward through Batangas is progressing favorably.

THE BAGUIO RAILWAY.—Extensive surveys are under way for the purpose of locating a desirable line to connect Baguio with the Manila Railway Northern Trunk line. Several lines are being run from the west coast to the Summer capital and it is not improbable that an electric road will be installed.

EXPORT OF JAPANESE RAILWAY SLEEPERS.—During the last three years Japan has exported to China, Mexico, Hongkong, England, Canada and the United States over yen 13,000,000 worth of railway sleepers, and in 1909 the value was represented by about yen 9,000,000.

THE KOWLOON-CANTON RAILWAY.—It is expected that this line will be opened for traffic next month. Early this month the first locomotive passed over the section between Hunghom and Yaumati and the permanent way was declared complete to the frontier from Kowloon. The *China Mail* states that the purpose of opening the line at this stage has been deemed advisable in order to work up the light local traffic, and to transport material for the Chinese section if required, all of which will help in earning revenue. For a time, however, the complete rolling stock will not be available. This is because of the delay in the supply from Home of the iron framework for the passenger cars, which was to have been delivered in the early part of the year but which as yet has not arrived in the Colony. The bodies of the cars have been built at the Hongkong and Whampoa Docks and are quite ready for the addition of the necessary iron-work. By reason of this delay it will not be possible for the proper cars to be used at the opening or for some time afterwards. Accordingly, ten four-wheeled covered goods wagons have been converted into temporary passenger coaches, eight being fitted as third class cars and the other two as first class. These will be in use until the other coaches are in readiness. These latter coaches will be of most approved style. They will number eight altogether and will be of what is known as the corridor bogey type, illuminated with electric light, and possessing every convenience. They will be of the following classes:—One First Class to seat 32 passengers: one First and Second Class, combined, to seat 24 First Class and 44 Second Class passengers: one Second Class, to seat 82 passengers: three Third Class, to seat 120 passengers each: one Third Class, Luggage and Brake, to seat 34 passengers: one Third class, Mail and Brake, to seat 28 passengers. The total weight on the rails of each coach will be 44 tons. The goods wagons will number about 4 and will be of varying carrying capacity, ranging from 30 tons to 15 tons.

Altogether, says the *Mail*, there will be four locomotives used on the section, though the two smaller of these will not be available until the

beginning of next year, as they are being used in construction work by Messrs. Leigh and Orange up to that time. The other two are magnificent types of engines, each having a total weight of 89 tons 15 cwt. They are six-wheeled coupled sidetank engines and will prove especially valuable for the peculiarities of the line over which they are to run, enabling the complete run through to be made without the necessity of stopping to take in water.

As to the Kowloon terminus, the present station near the Ferry wharf is purely a temporary one, as also is the one nearing completion at Hunghom. These are thought to be all that is necessary for the time, probably until the opening of the Chinese section. It was, in the early days, intended to have the terminal station on Kowloon Point, but the proposal of Mr. Lindsey, the present Chief Resident Engineer, to have it located at Hunghom has now received the approval of the Secretary of State. So in the course of time more substantial station buildings will be erected at Hunghom, which will serve the native population well and also be equally convenient for those residing on the Hongkong side, for a pier will be constructed adjoining the station and passengers will be conveyed across the harbor.

THE CHINCHOW-AIGUN RAILWAY.—According to Peking dispatches to the *Standard China* is willing to modify the original plans for the construction of this railway so that it will not proceed farther than Taonanfu and thus remove the proposal outside the zone of Russian contention with the understanding, however, that this modification must not be interpreted as a recognition of Russian claims. No official announcement has been made in support of this report as cabled.

F. M. S. RAILWAYS FOR 1909.—The total receipts for the year, according to the annual report, amount to \$5,377,409, an increase of \$119,510 over the previous year and exceeding the estimate by \$157,409. The total amount expended including amount to capital account for railways during the year amounted to \$7,469,342.

THE YUNNAN-KWEICHOW RAILWAY.—The Viceroy of Yunnan and the Governor of Kweichow have petitioned the Board of Communications for a foreign loan to construct a line between these two points and urge an early preliminary survey. These officials state in their petition that they do not believe it possible for the merchants of the provinces interested to raise the necessary funds.

INDIAN BRANCH RAILWAYS.—The Indian Government has provided new regulations covering the extension of the railway system and of the approval for guarantee of interest on new branches proposed:

(1) There will in future be no published list of approved projects, but any project may be submitted for approval at any time and will be considered at once upon its merits. (2) The interest which Government is prepared to guarantee upon approved projects is raised from 3 to 3½ per cent. (3) In the case of Company branch lines connecting with State worked lines, the Company will be allowed to annex the profits up to 5 per cent, instead, as heretofore, up to 3½ per cent, before dividing the surplus with Government. (4) In view of these concessions, a proviso is added that the terms for the construction and working of the proposed branch line by the main line administrations must be arranged in advance to the satisfaction of the Government of India. (5) Administration expenses during construction in the case of branch lines worked by the main line administration, may be charged as part of the working expenses to be met out of the percentage taken by the working agency until the 5 per cent is earned to the branch line company, instead of, as heretofore, until 3½ per cent has been earned. (6) A compulsory purchase clause is added, enabling Government to acquire a branch line on one year's notice at any time on the payment of twenty-five times average net earnings (excluding payments on account of guarantee or rebate) during the three pre-

ceding years or of 115 per cent of the capital expenditure on the line whichever is the greater. The ordinary purchase clause is also modified to make it that Government cannot acquire under it until thirty years have elapsed instead of as previously twenty years.

RAILWAY SUPPLY SHOPS AT YONGSAN.—Under the direction of the Railway Board of Korea, these shops are now engaged in turning out a large order for freight and passenger cars for the railways to supplement those ordered from the United States. There are now 28 cars including passenger and baggage and mail coaches and 100 freight cars being constructed at this factory, and it is expected they will be turned over to the authorities by the end of the year.

CARRIAGES FOR THE TIENSIN-PUKOW RAILWAY.—The *China Critic* announces the arrival at Taku of two first class carriages which will be put on the service to Te Chow.

SOUTHERN SECTION TIENSIN-PUKOW RAILWAY.—According to the correspondent of the *Shanghai Mercury*, 100 miles of this section should be completed by the end of the year. He reports that most of the bridges for 65 miles are completed and track laid for 45 miles. With the completion of a difficult cutting through the Pukow hills there will be 65 miles of continuous track. Two engines and 40 cars are engaged in construction work on the Pukow end. Progress is reported on the permanent bridge crossing the Sha-ho. The *Mercury* also publishes a description of the Pukow Railway shops which, under the direction of Mr. J. Alston, are equipped to keep the rolling stock in condition. At the present time the rolling stock includes ten main line engines consisting of two American locomotives manufactured by Baldwins and eight others manufactured by the North British Locomotive Company, Ltd. There are two ballasting and earthwork locomotives, American Baldwins, and four locomotives bought from Tungshan works for earthworks. There are also 100 high-sided wagons, built by Hurst Neilson, Motherwell, and 50 low-sided wagons built by the Midland Railway Carriage and Wagon Company, 50 low-sided wagons built in Belgium and 50 covered goods wagons built in England. There are also:—100 Mud-Wagons, 80 low-sided wagons and 20 flat wagons, built at Tungshan. The machine, fitting, smith and present erecting shops consist of four 42 feet spans 200 feet long. The locomotive store is of three 25 feet spans, 100 feet long. Foundry and Boiler House one span 42 feet by 200 feet long. Carriage shed one span 40 feet by 200 feet long.

The total length of the Southern section of the Tientsin Pukow Railway is 236½ miles. There are 200 bridges and 377 culverts. The length of bridging per mile—Lightest district—61.7 linear feet per mile; Heaviest district—96.3 linear feet per mile. Thus the average throw-out is 74 linear feet per mile. Total amount of earth work is 3,430,000 fong, while the total amount of rockwork is 299,800 fong.

JAPANESE PRIVATE RAILWAYS.—The Railway Board reports the filing of applications by the promoters of 50 projects this year including 36 referring to the Kobe-Kyoto district.

MANILA RAILWAY BONDS.—An issue of P4,000,000 of government guaranteed bonds by the Manila Railway Company has been authorized by the Philippine government to cover the expenditure of construction of new lines.

OSAKA AND KOBE RAILWAY IMPROVEMENTS.—Plans have been submitted to the Railway Board involving the estimated expenditure of yen 8,000,000 for the rebuilding of the Osaka depot and the construction of an elevated railway through Kobe. Additional funds will be secured by the sale of land.

HONAN-TUNKWAN RAILWAY.—The survey of the first section of this line is reported complete and work has commenced from Loyang.

PHILIPPINE MINING NEWS

PARACALE MINING DISTRICT.—Reports from Paracale indicate that the present season will be marked by greater activity than ever. The unconfirmed report that the Paracale Gold Dredging Company's new dredge has been taking out about 200 ounces a week since operations began created quite a stir in Manila mining circles. Previous to the collapse of the old dredge, which was not adapted in every respect to the ground, the company made a record for a while of from 500 to 600 ounces a month. The new dredge is reported to save a greater percentage of the values and to meet conditions satisfactorily.

The Philippine Dredging Company has at least started its pioneer work with the Risdon dredge on the Malaiguit River and the first run of 18 hours is reported to have resulted in winning 15 ounces of the metal. If this is confirmed the company, after many discouragements, has entered upon a bright future. The ground where this dredge is working is reported to average very high values.

The Stanley Dredge suffered an accident in the breaking of a shaft this month, but reported 120 ounces as the result of three weeks work. The repairs will not entail much delay.

The Tumbago Mining Company was recently reorganized and the capitalization increased to \$1,000,000 under the laws of the State of Nevada. This company is proceeding with development work.

THROUGH SLEEPER SERVICE TO EUROPE.—The *Japan Mail* announces that the International Sleeping Car and Express Trains Company and the East China Railway Company have arrived at an agreement that during ten years commencing on the 1st July (of the Julian calendar), 1910, the Sleeping Car Company shall make use of the Railway Company's carriages and wagons (twelve each of the first-class and second-class carriages, a dining-car, and five wagons), and that the changing of trains shall be conducted at Irkutsk. The connection with the Japanese railways being settled, through tickets will be issued on and after the 1st July (of the Julian calendar) this year at the principal stations in Japan.

JAPANESE RAILWAY RECEIPTS.—The June report gives yen 160,473 as the passenger receipts and yen 3,193,550 the revenue from freight for June, which is an increase in passenger traffic receipts of yen 201,285 and 164,000 for freight compared with June, 1909.

CANTON-AMOV RAILWAY.—The Army Advisory Board has recommended that this line be converted into a military line.

HAKODATE RAILWAYS.—In his report for 1909 Mr. Vice-Consul H. G. Partlett says: "The length of the railway lines in the Hokkaido at the end of 1909 was 645 miles and 7 chains (single track). During the year the following construction work was done: The track was doubled on the section between Zenibako and Iwamizawa, a distance of 36 miles and 49 chains. The construction work (embankments, bridges, culverts, etc.), on the Fukagawa-Rumoe section, a distance of 31 miles, was almost completed. The balance of the work will be carried out in 1910, and the line should be opened to traffic in the autumn of that year. The same will probably be the case with a section of 48 miles on the Ikeda-Abashiri line. On the Teshio line the work of construction was started in the autumn of 1909. It is also generally reported that a short line of rail will presently be laid between Hakodate and the cement works at Kamiiso, 7 miles or more down the bay. The survey of the route was completed at the close of the year. On the main island a short line of rail was opened in November connecting Aomori with some of the villages in the Imperial forest preserves lying on the western horn of the bay. The gauge is only 2 ft. 5 in., and traffic will be confined to the transport of lumber, for which purpose three Baldwin engines of 10 tons and a "Lima" engine have been purchased."

The Guamas Placer Mining Company completed its organization this month and capitalized at P500,000. The officers elected were: President, D. M. Carman; Vice-President, Francisco Ortigas; Treasurer, E. B. Soriano, and Secretary, G. C. Sellner. The directors are E. B. Soriano, A. Burlingame Johnson and Francisco Ortigas. All the stock has been subscribed. The property owned by this company is reported one of the richest in the Paracale District.

No announcement has been made with regard to the San Mauricio property or the operations of the mil.

Mr. Karl Swensen, instructor of geology in the Chinese university at Nanking, paid a visit to the Philippines last month and had an opportunity of examining the properties in Benguet and Paracale. He also made an examination of the Paracale Extension claims while in Paracale.

THE BENGUET MINING DISTRICT.—The Benguet Consolidated has been retimbering and cleaning up the dump since last writing and 72 ounces are reported. This plant is not operating to its fullest capacity on account of the progress of repairs covering the damage sustained last fall.

There is great activity on all the different properties in development work and visitors to Baguio are greeted by continual blasting throughout the mineral belt.

The Headquarters plant is on the ground and will be installed as soon as the expert arrives. The development work on the Headquarters group has shown very encouraging results.

The Major group is also a center of activity and preparations are being made to instal the plant ordered by the owners.

There is a movement on foot in the Benguet region to amalgamate all the different interests and it is said to be progressing favorably. The promoters believe that by centralizing the administration and establishing a large central plant the cost of production would be greatly reduced and tend to more effective development.

NUEVA ECIJA PLACER.—It is understood that representatives of American capital have become interested in a few options on the placer fields in this province and that tests have proven very satisfactory. There are about 2,000 acres involved in one group in which Judge A. D. Gibbs, M. A. Clarke, and Messrs. Squires Brothers are interested that is reported to be included in these options. These fields are an extension of the old placers at Gapan that have been worked for many years by antiquated methods. The properties recently staked incline towards the mountain regions of the east coast.

LEPANTO MINING NEWS.—The big copper at Mancayan is attracting some attention and we understand that the Lepanto Mining Company that holds the greater part of the territory under options have proceeded to reorganization and an increase of capital for the purpose of engaging in development work on a more extensive scale. British capital is said to be interested.

The Suyoc gold deposits lying near the Mancayan copper are said to warrant the expenditure to develop them. For years gold has been taken out of the placers, but no organized effort has been made to secure the largest measure of results for the outlay made by the different owners. Indeed it would appear that the Mancayan and Suyoc districts have suffered from lack of organized effort among the owners.

TAYABAS OIL FIELDS.—There is little to report in the way of development work. The drilling plant has been installed but the operations have been subjected to many delays. The owners of the property and the holding syndicate are sanguine of success.

BATAN COAL MINES.—The Bureau of Navigation has undertaken the construction of coal bunkers to have a capacity sufficient to meet the needs of the Insular Government. They will be located convenient to the mines and be equipped with the most modern appliances for loading and to have a capacity in this respect of handling 2,000 tons a day.

The Federal coal mines on Batan islands that were being developed by the U. S. Army have been shut down as a result of the unsatisfactory tests reported. It is the purpose of the Federal Government to later make a complete survey of the whole island to secure accurate data as to the formations there before anything further is attempted.

THE MASBATE DISTRICT.—We are informed that the Philippine Exploration Company has decided to forfeit its option on the Eastern properties. No official announcement has been made by the company as to the status of the property, but it is believed that the measure of development work did not warrant the purchase price named in the option.

PUBLICATIONS HAVING REFERENCE TO MINING IN THE PHILIPPINES.—In the recent review of mining in the Philippines by Mr. Warren D. Smith, Chief of the Division of Mines, Bureau of Science, the following list of references was published:

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1876. Centeno y Garcia José. Memoria geológico-minera de las Islas Filipinas. Boletín de la Comisión del Mapa Geológico de España, Madrid (1876), 3, (Copper, 221-226).

1881. Hernandez, Antonio. Report on copper in the district of Lepanto (in Spanish). Revista Minera, Madrid (1881), 2, 112-118.

1901. Becker, G. F. Report on the geology of the Philippine Islands. U. S. G. S., 21st Ann. Rept. (1901), pt. 3, 493-614.

(Summary of geologic knowledge up to the time of American occupation. Copper, 584-590).

Rinne. Kupfererz Sande in Malaguitgebiet bei Paracale. Ztschr. f. prak. Geol. (1901), 387.

1905. Eveland, A. J. A preliminary reconnaissance of the Mancayan-Suyoc mineral region, Lepanto, P. I. Bull. No. 4, Mining Bureau, Manila (1905).

(A study of the geology of the region, with abstracts from earlier reports. A detailed map of the district on a scale of 1:4,800 is published as Bull. No. 5 of the Mining Bureau.)

McCasky, H. D. Fifth annual report of the Mining Bureau for the year ending August 31, 1904. Manila (1905). (Copper, 29-30).

McCasky, H. D. Sixth annual report of the Chief of the Mining Bureau for the year ended August 31, 1905. Manila (1905). (Copper, 16.)

1906. Lehlbach, L. Mancayan-Suyoc mines and Abra River placers, Lepanto-Bontoc. Far Eastern Rev. (1906), 3, 168-170.

1907. Chase, T. Minerals in the Philippines. Eng. & Min. Journal (1907), 83, 852-853.

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1908. Goodman, M. Metallic mineral resources. The Mineral Resources of the Philippine Islands. Bureau of Science, Manila (1908). (Copper, 23-24).

Silver and lead:

1886. Abella y Casariego, Enrique. Rápida descripción, física, geológica y minera de la Isla de Cebú. Madrid, Tello (1886). (Reference to galena, 146.)

1901. Becker, G. F. Report on the geology of the Philippine Islands. U. S. G. S., 21st Ann. Rept. (1901), pt. 3, 493-614. (Silver, 590-591.)

1905. McCasky, H. D. Fifth annual report of the Mining Bureau for the year ending August 31, 1904. Manila (1905). (Lead and Silver, 30) 1907.

Goodman, M. Island of Marinduque. Far Eastern Rev. (1907) 3, 365-366.

Iron Deposits:

1903. McCasky, H. D. Report on a geological reconnaissance of the iron region of Angat, Bulacan. Bull. No. 3. Mining Bureau, Manila (1903).

FAR EASTERN ENGINEERING, CONSTRUCTION, COMMERCIAL AND FINANCIAL NEWS

ELECTRIC RAILWAYS, LIGHT, POWER, TELE- GRAPHS, TELEPHONES, AIRSHIP, ETC.

CHINESE TELEGRAPH LINES.—The proposed expenditure of Tls. 600,000 for the extension of the land lines in Shantung, Shansi, Honan and Kwangtung has been abandoned for the present on account of lack of funds.

BRENNAN'S MONORAIL IN ALASKA.—An American syndicate has undertaken the construction of a line 100 miles in length from the Matas-Matamiska coal fields towards Fairbanks within a year. It is estimated that the necessary track can be laid at a cost not to exceed \$3,000 a mile. It is the purpose of the syndicate to extend its operations covering the different points in the territory should the operations prove satisfactory.

THE PERFECT ORIENTAL POSTMAN.—The *N. C. Daily News* publishes a copy of "Rules for Daily Conduct" issued by the Japanese Director of the Communication Bureau at Tokyo to the officers and employees of the Post, Telegraph and Telephone Exchange offices:

"(1) Work earnestly and soberly, with all your might. (2) Rely not upon to-morrow; without fail do to-day the work which should be done to-day. (3) In your daily intercourse be whole-hearted and free; do not fail in dis-

charging all obligations toward friends; be careful not to be a trouble to other people. (4) Carefully observe all rules; be punctual; keep all promises; return borrowed money and other articles at the fixed time. (5) Forget not kind deeds; delay not to visit people who show favors, or write to them, or visit their graves after death. (6) Be kind to all; be sympathetic to those in trouble; be kind and helpful to the sick. (7) Always consider yourself as in limited circumstances; let it be a fixed principle to be simple and frugal; overcoming self and suppressing all passions, endeavour to save money. (8) Since life is the seed of all achievement, guard your health and keep a strong body. (9) Be careful of yourself even when alone; morning and evening turn your thoughts inward. (10) Frequently engage in innocent sports and seek to be happy in your daily life. Since the above ten rules should never be forgotten for a moment, let us together endeavour to put them into practice in our daily life and work."

JAPANESE ELECTRIC ENTERPRISE AT FUSAN.—A project is on foot promoted by Japanese capitalists to establish a company at this point for the purpose of operating an electric light and power plant and to operate an electric tramway.

INDO-CHINA WIRELESS.—The postal department of the colony has been authorized to establish stations at Saigon and Hanoi, each with sufficient radius to carry messages between the two points, a distance of approximately 950 miles.

TELEPHONE SERVICE FOR CHINKIANG.—The apparatus for the installation of an exchange has arrived at this city.

HONGKONG ELECTRIC TRAMWAY COMPANY REDUCES CAPITAL.—At the recent meeting in London the capital of this company was reduced from £325,000 to £81,250 so as to conform to the actual assets of the company. The name was changed from the Electric Traction Company of Hongkong to the Hongkong Tramway Company and it is expected with the elimination losses from unstable currency substantial dividends would be paid on this capitalization.

HYDRO-ELECTRIC AMALGAMATION.—The Tokyo press announces the amalgamation of the different interests holding concessions on the Kinugawa River. There are three principal concessions, but the Kinugawa and the Anglo-Japanese companies have agreed to amalgamate and leave the third concessionaire out. The completion of the amalgamation was expected concluded this month.

PACIFIC WIRELESS.—Consul Dreher, of Tahiti, states in a report that former plans for developing the wireless system in the Southern Pacific having failed to develop, the governments of Australia and New Zealand have decided to establish a system of wireless telegraphy which will be under their control and which will embrace various groups of British islands, including Ocean, of the Gilbert group, where the Pacific Phosphate Company, of London, owns immense deposits of high-grade phosphates. The installation of that system may put an end to the plans of the Pacific Radio-Telegraph Company, and if so, Tahiti will have to look elsewhere for a connection with the telegraphic systems of the world. Such a connection could be made with the station of the United Wireless Company, of San Francisco, at Honolulu. Some successful experiments have already been made at Tahiti in receiving messages from the American Steamship Mariposa.

PHILIPPINE WIRELESS.—The committee representing the U. S. Army, U. S. Navy, and Insular Government are busy completing plans for the installation of a system that will not only place Manila in touch with every section of the archipelago, but establish communication with all the principal points along the coast of Eastern Asia. Thorough tests are being made of the different radii before the sites for the stations are selected by survey vessels operating in conjunction. The Government will also maintain portable equipment for emergency. These will be sent immediately to any point where response cannot be secured and may be utilized in army maneuver or for police duty in outlying districts. The surveys have not been completed, but work is being pressed so that there will be the minimum of delay in establishing the service.

TAXICABS IN SINGAPORE.—According to reports from Singapore an enterprising firm has introduced three taxicabs in that city and charges 40 cents Straits Cur. per mile divided into quarters.

PENANG INVENTOR OF ELECTRIC INSULATION.—According to the *Pinang Gazette*, Mr. O. V. Thomas, of the Penang Electricity Department, has not only invented a compound for the insulation of electric wiring, but has tested it for a year and found it has many advantages over other insulating compounds. It is believed to be a valuable substitute for rubber in the tropics, particularly for house installations by reason of its inherent qualities.

ELECTRIC LIGHT FOR KWANCHENGTSU.—The South Manchuria Railway has been approached by the Russian residents at this point with a view to securing a supply of electric lighting from the Japanese Electric Light plant at Chang-chun.

(History of the iron industry and account of reconnaissance with analysis of ores, 62 pp., 1 map.)

1905. Goodman, M. Report on the Bulacan iron industry. Sixth annual report of the Chief of the Mining Bureau, Manila (1905), 48-56.

(Contains estimates of the cost of production and annual output.)

McCaskey, H. D. Fifth annual report of the Mining Bureau for the year ending August 31, 1904. Manila (1905). (Iron, 29.)

Publications having reference to gold mining in the Philippines:

1874. Minard. Sur les gisements d'or de Philippines. *Bull. Soc. Geol. de France* (1874), 2, 403-406.

1876. Centeno y Garcia, José. Memoria geológico-minera de las Islas Filipinas. *Boletín de la Comisión del Mapa Geológico de España*. Madrid (1876), 3 (Gold, 226-230).

1879. Abella y Casariego, Enrique. Memoria acerca de los criaderos auríferos del segundo distrito del departamento de Mindanao, Misamis. *Boletín de la Comisión del Mapa Geológico de España*. Madrid, Tello (1879), 49, 5 pls.

1883. Abella y Casariego, Enrique. Ligera reseña de la minería de las Islas Filipinas. Madrid, Tello (1883), 15 (Gold, 4-6).

1899. Day, D. T. Mineral resources of the Antilles, Hawaii, and the Philippines. *Eng. Mag.* (1899), 17, 242-251.

Hermann, R. Besuch im Golddistrict von Camarines Norte. *Globus*, Braunschweig, Viegweg (1899), 73, 11-12.

1901. Becker, G. F. Report on the geology of the Philippine Islands. *U. S. G. S., 21st Ann. Rep.* (1901), pt. III, 493-614 (Gold, 576-584).

Nichols, J. C. Notes on the Pigholugan and Pigtao gold region, Island of Mindanao. *Trans. Am. Inst. Min. Eng.* (1901), 31, 611-616.

(Describes occurrence of gold veins and placer deposits.)

1905. McCaskey, H. D. Fifth annual report of the Mining Bureau for the year ending August 31, 1904. Manila (1905).

(Gives summary of the mineral resources. Gold, 27-29.)

McCaskey, H. D. Sixth annual report of the Chief of the Mining Bureau for the year ended August 31, 1905. Manila (1905).

(Gives summary of developments of year, 16-17).

1906. Smith, W. D. Preliminary geological reconnaissance of the Lobo Mountains of Batangas Province. *Phil. Journal Sci.* (1906), 1, 617-631, 1 map.

(Study of geology of the region.)

1907. Chase, T. Minerals in the Philippines. *Eng. & Min. Journ.* (1907), 83, 852-853.

Eveland, A. J. Eastern Mining Company's Masbate workings. *Far Eastern Rev.* (1907), 3, 330-333.

(Detailed description by the superintendent, of the company's property and mining methods employed.)

Eveland, A. J. Notes on the geology and geography of the Baguio mineral district. *Phil. Journ. Sci. Sec. A.* (1907), 2, 207-233.

(A study of the general geology of the district with detailed map on scale of 1:24,000.)

Goodman, M. The Island of Marinduque. *Far Eastern Rev.* (1907), 3, 365-366.

(Notes on geology and gold prospects.)

Goodman, M. Metallic mineral resources. *Far Eastern Rev.* (1907), 4, 12.

(Summary of mining. Gold, 12-13.)

1907. Goodman, M. Gold placers of Nueva Ecija. *Far Eastern Rev.* (1907), 4, 88.

(Notes on the geology and a description of operations.)

Goodman, M. History of placer mining in the Camarines. *Far Eastern Rev.* (1907), 4, 16.

(A short history of operations, with notes on the geology.)

Ickis, H. M. Camarines gold fields. *Far Eastern Rev.* (1907), 4, 56-57.

(Notes on the geology and a description of operations.)

1908. Ferguson, H. G. The Aroroy Mining District, Masbate. *Far Eastern Rev.* (1908), 5, 56.

(Short summary of the geology and mining.)

Goodman, M. Metallic mineral resources. *The Mineral Resources of the Philippine Islands*. Bureau of Science, Manila (1908), Gold, 22-23.

(Summary of mining work for the year 1907.)

Ickis, H. M. Mining and geologic notes on a portion of Northwestern Mindanao. *The Mineral Resources of the Philippine Islands*. Bureau of Science, Manila (1908), 28-31, with map.

Smith, W. D. Statistics of production. *The Mineral Resources of the Philippine Islands*. Bureau of Science, Manila (1908), 26.

Smith, W. D. Summary of the chief characteristics of Philippine ores. *The Mineral Resources of the Philippine Islands*. Bureau of Science, Manila (1908), 33.

Besides the above papers, the FAR EASTERN REVIEW in its number for June, 1907 (vol. 4, No. 1), published reports of the operations of various mining companies, and during the past two years special correspondence relating to Philippine mining has appeared from time to time in the columns of the Mining and Scientific Press, (San Francisco) the Mining Journal (London), the Australian Mining Standard, the FAR EASTERN REVIEW, and the Philippines Free Press.

MANILA ELECTRIC COMPANY.—The *London and China Express* states that the shares of this corporation have been introduced on the London market at 62, but on demand rose to 64.5. The company, which was incorporated in 1903, has had a fairly successful career, 3 per cent. having been paid on the \$5,000,000 of stock in issue for 1906 and 1907, while for 1908 and 1909 the rate was 4 per cent.

AEROPLANE TREATIES.—Washington and Mexico City are negotiating a treaty for the policing of the border with a view to preventing smuggling by means of aeroplanes.

AMERICAN MARINE WIRELESS ENFORCEMENT.—The law requiring the installation of wireless apparatus on every American vessel carrying a crew of fifty or passengers will go into effect July 1st, 1911.

UNDERGROUND TELEPHONE INSTALLATION AT PEKING.—The director of the telephone exchange at Peking has been instructed by the authorities to place all the wires of the system underground. The work will be started next month.

THE KEIHIN ELECTRIC RAILWAY COMPANY.—The profits for the half year amounted to 152,000 yen, out of which a dividend of 5% per annum was paid, yen 25,000 passed to reserve accounts; yen 10,000 expended in bonus to officials and yen 50,000 carried to next account.

VISAYAN ELECTRIC COMPANY.—The annual report of this company proved satisfactory to the shareholders and the following officers were elected: President, Mr. Albert Bryan; Vice-President, Mr. Martin M. Levering; Secretary, Mr. John Freeman; Mr. Albert Bryan temporarily acting. Members of Board of Directors, Mrs. Mary Bryan and Mr. Alfonso Z. Sy Cip.

JAPANESE ELECTRIC RAILWAYS.—Consul David F. Wilber tells of the opening of four new trolley lines in the Kobe district:

The four miles of the Kobe Electric Company's line (18 miles contemplated), opened in April, cost \$1,500,000 gold. The dynamos, rails, poles, and air brakes are American, the running gear and machinery of cars English, and the work of cars and overhead wires Japanese make. The fare is 4½ cents, and the earnings for the first two weeks averaged \$850 per day, and expenses \$230 per day.

The Minamo-Arima Electric Railway Company's 18-mile line to mountain summer resorts, opened on March 15, cost \$2,000,000. The rails, dynamos, boilers, and running gear and machinery of cars are American, the work of cars and overhead wires Japanese make. The fare is 19 cents, and the 30 cars are earning \$940 per day.

The Keihan Electric Railway, 28 miles long, was opened on April 15, connecting the important cities of Osaka and Kyoto, and running through other large towns. The \$3,500,000 capital was expended and a debt of \$1,250,000 contracted. The materials nearly all came from England, though the overhead wires came from the United States, while the work of the cars was made in Japan. The fare for the entire distance is 20 cents, and the daily earnings for the first two weeks averaged \$1,500. The company's 30 cars, with an 8-minute schedule, will be supplemented by 20 cars with a 5-minute schedule. The Keishin Electric Railway, from Kyoto to Otsu, and the Uji Electric Railway, from Fushimi to Uji, now building, will connect with this line.

The Hycgo Electric Railway opened its first section—from Hycgo to Suma—on March 15; it will extend 12 miles along the shore of the Inland Sea to Akashi. The material has chiefly come from the United States, the work of the cars and the overhead wires being made in Japan.

The new electric railways just opened having paralleled the track of the Government Steam Railway from Kyoto, through Osaka and Kobe, as far as Suma, on the Inland Sea, the authorities of the Imperial Government Railways, in order to meet the competition, have lowered the third-class fare for this section of the line to the same amount as that charged by the electric railway companies. They are also going to spend a large sum of money in track improvement and will put on more and faster

trains. This will cause greater danger and inconvenience at the level crossings in Kobe, and the Western Railway Administration Bureau will make the line through the city an elevated one.

PUBLIC WORKS, DOCKS, BUILDINGS, ETC.

THE DAIREN WATERWORKS.—The announcement is made that, notwithstanding the delay attending the installation of the reservoir at Fushimidai, the city of Dairen may look for its completion next month and the water will be laid on at once.

WATER SUPPLY FOR THURSDAY ISLAND.—It is proposed by the Australian government to expend the sum of £10,000 in improving the water supply of this port in view of its increasing importance as a port of call.

THE MATTHEWS-DAVIDSON HARBOR SCHEME FOR MELBOURNE.—Two new piers have been recommended and a new dock and pier near the Victoria. The expenditure will total £873,000, of which £408,000 will be spent on the new pier, 105,000 dredging channels and £360,000 on the Victoria dock piers.

GOVERNMENT WORKS AT TAIHOKU.—Consul S. C. Reat, of Tamsui, states that the Japanese feel that they have fashioned and constructed a capital city for Formosa that far surpasses in architectural elegance the majority of cities in the Far East. The improvements under the direction of the Department of Public Works include the harnessing of the mountain streams to supply light and power and the pumping of water from the mountains by an excellent system of supply. The new government buildings numbering 20 show solidarity and compactness and the expenditure is believed by Mr. Reat to be justified, although they cost \$2,867,495 gold. The new Government offices proposed built in the next five years will cost about \$1,245,000 gold.

NEW PIER AT HOGART.—Consul Henry Baker writes that a new pier 700 feet long, 100 feet wide with a minimum depth of 36 feet alongside has been completed at this port at a cost of £26,000. On the pier is a shed 500 feet long by 44 feet wide.

THE NEW PARLIAMENT BUILDINGS AT TOKYO.—The committee in charge of the plans for the construction of this group of buildings at Tokyo has reported on a site covering an area of 150 acres for the buildings and an appropriate park which, with the buildings, are estimated to cost in the vicinity of yen 17,000,000. The buildings will include the 238 rooms with accommodation for 450 members. Besides the two houses the Horse Administration Bureau, the Chinese legation and the official residence of the Prime Minister will be included.

THE MONSTER BRIDGE OVER THE AMUR.—When the bridge over this river is completed at Khabarovsk, it will be the one of the largest structures of its kind in the world. Its length is 7,658 feet, divided into 22 spans ranging from 100 feet to 284 feet.

ZAMBOANGA FRANCHISE MUST BE ADVERTISED.—The application for a franchise by a local Zamboanga company to instal a gravity water supply and electric light and power plant has been acted upon by the Governor-General. He has decided that proposals should be invited and the franchise be given to the most satisfactory tender.

ILOILO RIVER NAVIGABLE.—As a result of the recent dredging vessels of 4,000 tons have proceeded up the river to the godowns for sugar and other cargo securing dispatch with great expedition.

NEW MANILA THEATER.—The Majestic is the name of a modern theater constructed on Calle Iris at a cost of ₱70,000.

NORMAL SCHOOL FOR MANILA.—The site of the new Normal school has been chosen on the new boulevard known as Taft Ave. It will be a three storey structure built of reinforced concrete with a frontage of 100 meters on the avenue

and 70 meters on a new street to be laid out. It will have the shape of an L and of Spanish renaissance design.

PHILIPPINE IRRIGATION WORKS.—The committee recently approved the preliminary plans for the development of a gigantic system including 340,000 hectares of agricultural lands and involving seven provinces near Manila. The scope of the system may be gathered when it is realized that it embraces all the countryside included in the valleys between the west and east coast ranges as far north as the boundaries of Pangasinan. It will also entail the control of all the rivers of that region that are tributary to the Rio Grande.

PANAMA CANAL LOCKS.—The most gigantic engineering features of the Panama Canal will be the great locks to be located at three different points, ten at Gatun, six at Pedro Miguel and seven at Miraflores. The largest of these will be eighty-two feet high, and all will be sixty-five feet wide. Bids were opened at the Isthmian Canal Commission, Washington on June 14th for furnishing the material and building these locks, which will require about 60,000 tons of steel. The lowest bid was submitted by the McClintock-Marshall Construction Company of Pittsburg for \$5,374,474. The United States Steel Products Export Company submitted two bids at \$6,100,000 and \$6,200,000. The bid of the Maryland Steel Company was \$3,409,368, and of the Riter-Conley Manufacturing Company of Pittsburg \$10,183,257.

YANGTZE DEFENCES.—Peking is considering the request of the Viceroy of the Liangkiang for activity on the part of the Board of War in the repair and strengthening of the defences at the strategical points along this river. The Viceroy announces that he is ready to supply the funds necessary.

THE TA CHING BANK BUILDING.—This new Shanghai building is now occupied. It is a four storey structure with a frontage of 240 feet on Hankow Road and a depth of 75 feet. The bank occupies the first floor and the second and third floors are set aside for offices. It is of massive construction with red brick facing. The architects were Messrs. Atkinson & Dallas. Two elevators are installed and were supplied by Messrs. Scott, Harding & Co. representing Messrs. A. Smith & Steven, manufacturers. The doors of the strong rooms of the bank were supplied by Messrs. Jardine, Matheson & Co., agents for Messrs. Chubb & Sons; Messrs. Ilbert & Co. supplied the tiles, etc., and Messrs. Scott, Harding & Co., the plate and other glass. The hot and cold water installation was made by Messrs. Howarth, Erskine, Ltd.

LIAO RIVER DREDGING.—Provision has been made by the Peking Government for the expenditure of Tls. 500,000 during the next five years. A tax will be levied on vessels covering three-fifths of that amount and the balance will be supplied by the Federal Government.

PUBLIC WORKS IN JAVA.—Mr. Consul J. W. Stewart in his report for 1909 states that much needed improvement to the harbor at Sourabaya are being carried out. The river is being widened and dredged with a view to relieving the congestion of lighter traffic and a much larger scheme involving the construction of a harbor with wharves alongside which ocean-going vessels can load and discharge is under consideration, and will, in due course, be reported upon by two experts who have been sent out from the Netherlands for the purpose. Dredging operations on the bar at the western entrance to Sourabaya harbor have resulted in a gain of about 2 ft. of water and vessels drawing from 19 to 21 ft. can now use this entrance. Supplies have been voted by the Government for the carrying out of harbor improvements on a large scale at Samarang. The proposed improvements include the lengthening of the breakwaters, the construction of a harbor for lighters, and of a subsidiary canal with customs wharves and warehouses for the accommodation of imported goods, leaving the present canal free for outward traffic.

SHIPBUILDING, MERCHANT MARINE AND FISHERIES

FUSAN-BAKAN S. S. LINE.—It is the purpose of the Japanese Railway Board to add two new steamers of 3,000 tons each to meet the demand for traffic carrying when the Antung-Mukden Railway is completed. The orders will be placed with the Mitsu Bishi and the Kawasaki Docks.

PACIFIC MAIL S. S. CO.—At the recent meeting of the stockholders of the Pacific Mail W. G. Rockefeller was elected director to succeed to the vacancy made by the death of the late E. H. Harriman and Mr. M. D. Schiff succeeded W. V. S. Thorne.

THE SHANGHAI DOCK AND ENGINEERING COMPANY, LTD.—The statement for the year shows an increase in gross earnings of Tls. 230,569.20 and the increase in net earnings Tls. 120,406.50 compared with the previous year. At the annual meeting the chairman said "taking into consideration the scarcity of work and the keen competition for it, we consider these increases very satisfactory."

REDUCED CHARGES AT DAIREN.—It is understood that a reduced scale of charges for stevedoring and wharfage will go into effect at an early date. This with the compulsory pilot system free of charge are among the innovations at this port.

NEW JAPANESE CRUISER IN COMMISSION.—The second class cruiser Tone, constructed at the Sasebo dockyard, after her speed trials has been placed in commission. Her displacement is 4,035 tons and her speed 23 knots. Her armament consists of two 6-inch guns, twelve 4.7 inch guns and two-twelve pound.

WEIR COMPANY'S NEW VESSELS.—The Leceric and the Oteric, 11,000 tons, fitted for passenger service, recently launched from the Clyde, will soon be added to the trans-Pacific trade for this company.

THE NEW ENGINEERING AND SHIPBUILDING WORKS, SHANGHAI.—The Tung Tsi, a light draft steamer and one of two ordered for Northern Service, was launched from the above works last month. The vessels are 150 feet long and 25 feet in length and are equipped with engines of diagonal compound type with locomotive marine boilers. This company has been very active this season having orders for ten steel lighters, several tenders and much repair work.

THE TOYO KISEN KAISHA.—It was unanimously agreed at a recent meeting of the Board of Directors to pay 7.50 a share on the 130,000 shares issued and that the balance be paid in instalments to wipe off pressing indebtedness and to pay in part for the new vessel of the Tenyo Maru type recently ordered at the Mitsu Bishi Dockyards.

MEXICO MARU LAUNCHED.—This vessel ordered by the Osaka Shosen Kaisha for its trans-Pacific service was successfully launched from the Mitsu Bishi Dockyards last month. She has a displacement of 6,000 tons and is the most modern vessel equipped as a freight steamer designed for this trade.

NEW YORK-MANILA LINE ADVOCATED.—Vice-Consul Chester Davis, in a recent report from Colombo, directs attention to the fact that this year the exports from Ceylon to the United States will reach \$13,000,000 gold and of the imports the United States supplies but \$1,000,000. He advocates a direct line of steamers from New York to Manila calling at Aden, Colombo, Singapore and Hongkong and points to the great development of Ceylon through direct connection with Great Britain as evidence of the assistance such a line would prove in the development of Manila and the Philippines.

SHIRE LINE INNOVATIONS.—Advices have been received that this line has reduced the sailing time between London and the Far East to 45 days and reduced rates of £350 from Hongkong to London and £330 to Marseilles have been announced.

PIER CHARGES AT MANILA.—The Insular Collector of Customs has issued the following circular:

"Every vessel coming to a pier shall pay a pier charge of one centavo per gross ton per twenty-four hours or for any part thereof, exceeding six hours; Provided, that the charge for twenty-four hours to any vessel shall not exceed one hundred and fifty pesos (P150), and Provided Further, that when any vessel which has entered the Port of Manila on its outward voyage and discharged cargo at a pier, enters this port again on its inward voyage, the pier charge shall be one-half the regular charge."

THE HONGKONG, CANTON, MACAO S. S. CO., LTD.—The profit for the year including \$20,766.39 carried forward from former account amounted to \$143,526.21.

THE OSAKA SHOSEN KAISHA.—This company recently declared a dividend of 6% for the half year.

JAPAN'S NAVAL PROGRAM.—According to the *Japan Mail* the program outlined is confined to the following:

"The projected expansion shall be carried out as soon as practicable in accordance with the minimum naval defence scheme formulated by the authorities. 2. The said expansion shall be carried out within the limit of neither violating the non-loan policy of the present Cabinet nor obstructing work on urgent undertakings. 3. The financial resources for the purpose shall be obtained from surplus revenue. 4. The principle of manufacturing warships in Japan shall be adhered to for the time being, so as to avoid the outflow of specie and practice economy as much as possible, and accordingly no extraordinary item, such as expenditure for the fourth expansion shall be made in the Budget. 5. The terms to the already established schemes shall not be altered. In the next fiscal year, therefore, a sum from Yen 15,000,000 to Yen 20,000,000 is to be added to the expenditure already allotted, and with this money the principle of large ships and large guns is to be adhered to."

MINES, MINERALS AND THE METAL TRADE

F. M. S. TIN RETURNS.—The returns for June show an output of 11,085 piculs.

KOREAN GOLD PRODUCTION.—The value of gold produced from the Sakju and Changsong mines in July is reported to have reached yen 219,000.

THE IWAKI CEMENT COMPANY.—This organization has decided to reduce its capital from yen 1,000,000 to yen 850,000. The net profits for the term amounted to yen 4,762.

THE KUANTAN TIN COMPANY.—The report for the year showed a profit of \$6,787 and gave the information that the deposits would be worked out in another year. The company has \$30,000 on fixed deposit, \$10,600 on current account with tin in transit. If the company went into liquidation, it would give the shareholders approximately \$4 a share.

STRAITS TRADING COMPANY, LTD.—The half yearly report of this company shows a net profit for the term of \$519,370, out of which a dividend of 15% was paid.

AMERICAN MACHINERY FOR BORNEO.—Consul General Du Bois, of Singapore, directs attention to the supply of 800 tons of machinery and 400 tons of iron frame work shipped from the United States to Borneo for installation on a jelatong plantation. The work of the American factory was so perfect that after a voyage of 12,000 miles it was successfully installed without the slightest adjustment.

RAUB GOLD OUTPUT.—The output for the four weeks ended July 20th amounted to 1,446 ounces.

THE MENGLEMBU LODGE SYNDICATE, LTD.—The meeting called for the purpose of discussing a resolution providing for the increase of capital

to \$500,000, no action was taken in view of an offer to purchase having been made in the interval following the notice of meeting.

THE FUSHUN MINE CONTROVERSY.—The Chinese authorities have reduced their demands to a request that the Chinese owner be reimbursed to the amount of yen 220,000 and the Japanese police be withdrawn.

THE CANTON CEMENT WORKS.—Vice Consul Meyers gives the following description of the Government works at Canton:

"The entire plant consists of the factory, a dwelling for the manager, several large offices, and dwellings for the laborers, all resting upon piles in a fork of the Pearl River, the factory being constructed of steel frames. The plant has eight kilns, and a capacity of 500 casks, of 400 pounds each, per day, but the present output is only 250 casks. A 600 horse-power engine and several small motor engines supply the motive power, and a small electric plant furnishes the light for the factories and office buildings. Attached to the works is a shop for the manufacture of the casks, which cost 24 cents each. The machinery for the entire plant was purchased in Germany. The plant has cost the Government about \$1,122,000, which amount has been taken from the education fund, to be returned from the profits of the works. The workmen number 250, whose wage is 14 cents per day and quarters. The only foreigner employed is a German chemical engineer.

The rock used in the manufacture of the cement is found about 80 miles from the works, is a pure limestone, and well suited for cement purposes, yet the output is not uniform, but this is attributed to the variable qualities of the coal used. Although little of the product has been put on the market, there is no reason why these works can not produce cement of first-class quality and at prices as low as that produced by its competitors. Of the 12,000 casks sold, 2,000 were used in Canton, 2,000 were shipped to North China, and 8,000 went to Manila.

THE SHELL TRANSPORT AND TRADING COMPANY, LTD.—At the annual meeting of this company special reference was made to the new petroleum concession in Sarawak and the necessity of providing for £500,000 to develop it by erecting a refinery, pipe line, etc. Besides the Borneo concession rich strikes have been reported on the holdings of the company in Java and Sumatra and the directors' report contains the information that if the present plans of the company mature, it will control an output of 3,000,000 tons of crude oil annually within another year. For the purpose of financing the extensive operations, an additional £1,000,000 were required and the increase of the capital stock of the company to £3,500,000 was decided upon immediately in an extraordinary meeting following the adjournment of the general meeting of the shareholders.

THE DUFF DEVELOPMENT.—The report of this company shows an output of 2,060 ounces of gold for the half year against 4,674 ounces for the corresponding term 1909.

THE COWIE HARBOR COAL COMPANY.—The following report was submitted by the chairman at the annual meeting recently held in London as a result of a visit to the mines. The company has arranged a scheme which would give a storage up to 2,000 tons at Sandakan, which would provide sufficient coal at all times for vessels calling without having to telegraph ahead.

"The conclusion he had arrived at was that the mine would be a great success, and for this they had the backing of facts. First, they had some 20,000,000 tons of coal proved. With normal freights they had a very ready market. The coal was very much liked by everybody. They had got a first-rate and a very confident staff. He asked the engineer of the boat on which he went out to Hongkong whether he thought the coal was sufficiently good to use on the Norddeutscher Lloyd big boats, and he said he was quite sure of it. Their output was increasing, and by the end of the

year the manager expected to be putting out 200 tons a day. The output to-day was from 130 to 135 tons a day. When they were producing 125 tons a day they were making a profit. They had reached that point when their cost of putting on board ship was lower than the lowest figure that had been paid for the coal, and this was the most important feature of the whole lot. If they were producing at a point lower than they had ever sold at, it only required an increased output to make a very nice profit. (Applause.) Anyway, he was satisfied. He had come back not only sanguine, but quite sure of success. And he was only echoing the opinion of every man out there who had had anything to do with the colliery at all."

F. M. S. MINING REPORT FOR 1909.—This report places the tin output at 818,888 piculs compared with 816,789 in 1906, 183,119 laborers being employed, while in 1906 there were 212,660 in 1906. The average price in 1909 was \$68.00, Straits Cur., against \$89.60 in 1906. The total area alienated for mining purposes amounted to 281,070 acres. The Senior Warden is doubtful of the prospects of the tin mining industry owing to the labor problem as 28,000 laborers have left the mines for other more desirable pursuits. Reference is made to the discovery of a bed of coal at Rawang in Selangor as promising results. The gold won during the year amounted to 16,243.6 ounces, of which Perak furnished 1,279; Negri Sembilan, 77, and Pahang 14,887.6.

AMERICAN OIL DUMPED IN INDIA.—An exchange reports that, while the Burma dealers were raising their prices following the new petroleum tax, an American syndicate dumped 1,000,000 gallons on the Calcutta market and, as the exchange states, "upset the Burma ap-
plécart."

COAL DEPOT AT BREMERTON.—The U. S. Naval authorities have decided to increase facilities for coal storage at the Naval station to 200,000 tons. The estimated cost of the depot proposed is placed at \$2,000,000 gold.

STRIKE AT THE TRONOH TIN MINES.—The *Penang Gazette* reports a strike at Tronoh of an extensive order some of the ground producing 90 cabbies per cubic yard.

FINANCIAL, COMMERCIAL AND MISCELLANEOUS

THE TRADE OF BANGKOK.—The total value of imports for the fiscal year amounted to Ticals 69,811,711 and the exports Ticals 102,570,434. Of the exports the largest volume is in rice and teak and of imported manufactured goods, cotton leads. There is a falling off in the import of cotton and an increase in the export of rice for the year.

CHINESE PUBLIC INSTRUCTION.—The president of the board of education has presented estimates for Tls. 1,600,000 to the board of finance for educational work for the coming year.

COTTON GROWING IN BRITISH NORTH BORNEO.—The report of the directors of the British North Borneo Company refers to the adaptability of the colony to the growing of tree cotton. During the year 40 tons were exported from Tuaran and the product was favorably reported on in Hongkong and Japan. A large area is adapted to the cultivation of this product and encouragement is being given the industry.

THE TANSAN MINERAL WATER COMPANY.—This company has been organized in London with a capital of £50,000 for the purpose of acquiring the sole and exclusive control of the right of importation, distribution and sale throughout Great Britain and the continent of the Japanese mineral water of that name.

SHANGHAI FINANCIAL SITUATION.—The Imperial Edict, authorizing the Shanghai Taotai to borrow Tls. 3,500,000 from the foreign banks to assist the local market, has relieved the situation that had assumed serious proportions as native bank after bank suspended payment. In addition to this loan, arrangements were

made to supplement it by native contribution of Tls. 1,500,000 in order to cover any risks. It is believed that the recent experience of the native banks will result in an adjustment of methods of carrying on business so as to prevent a recurrence.

THE RESTORATION OF TAKU.—The conditions under which the British Government proposes to restore Taku to China provide that the Chinese agree to build no more fortresses or arsenals there and that it will not be utilized as a naval base.

SHANGHAI MUNICIPAL REVENUE.—The total, according to the *Gazette*, for June amounted to Tls. 214,700.59 as against Tls. 172,825.28 for the corresponding month, 1909. The total for the half year 1910 amounted to Tls. 1,251,525.51 while the estimate for the year amounted to Tls. 2,575,350.

MALAY AND FOREIGN CONTRACT SYNDICATE, LTD.—This company has been registered with a capital of £30,000, of 29,850 shares ordinary at £1 each and 3,000 founders 1s. each.

ANOTHER RUBBER FLOTATION.—The Pulau Bulang Rubber and Produce Co., Ltd. has been floated with a capital of \$5,000,000 in \$10 shares, of which the present issue is \$4,670,000.

RUBBER CURING FACTORY.—The Planters' Stores and Agency Co., Ltd., propose establishing a factory at Kuala Lumpur equipped with modern machinery for the purpose of handling the product of the small planters. Three large creping and washing machines will be installed and the motive power provided by a 45 h. p. oil engine.

PHILIPPINE IMMIGRATION.—The number of foreigners arriving in the Philippines during the year ended June 30th, numbered 9,532, of whom 6,772 were Chinese; 772, Japanese; 579, Spanish; 586, British; 181 Germans; 201 Indian and the balance scattering.

BIG RUBBER DIVIDEND.—The Federated (Selangor) Rubber Co. will pay a dividend of 125% after only five years life.

MONGOLIAN PROTECTION SOCIETY.—Many Princes and Dukes in Peking are interested in the formation of a Mongolian Protection Society and several large contributions have been made to its treasury.

PHILIPPINE WOOD FOR LATE EMPEROR'S MAUSOLEUM.—A contract was entered into by the Export and Import Lumber Company of Manila through its president, Mr. W. Payne, to supply over 50,000 feet of Philippine walnut, narra and lumbayo to the Chinese Government available in September. The framing timbers of the mausoleum will be of walnut selected from the giant trees of Mindanao, some of which have a diameter of 45 inches, are 60 feet in length and a weight of 17 tons. The narra and lumbayo will be utilized for interior finishing, etc. Philippine lumbermen are greatly encouraged over this contract and look forward to many orders of a similar character from China.

TIEHLING FLOUR MILLS.—A report from Tiehling is to the effect that the management of the Tiehling Mill is negotiating with the Russian Flour Mill Company at Kwangchengtzu for the purchase of the latter plant with a view to increasing the capacity to 500 bags daily.

THE CHINA MUTUAL LIFE INSURANCE CO., LTD.—According to the recent annual report the assets of this company now stand at \$8,415,250, an increase during the year of \$1,300,760.00. New applications were received during the year amounting to \$13,632,247 being an increase over the previous year of \$1,306,427. Of these, policies were issued to the amount of \$11,986,645 and applications amounting to \$1,645,602 were postponed or declined. The total insurance in force March 31st, 1910, amounted to \$37,855,885. The total income for the year amounted to \$3,566,559, an increase over the previous year of \$492,724.

CHINESE PRESS ASSOCIATION.—The editors and proprietors of Chinese newspaper, published in Shanghai propose the organization of a press association with a view to advancing the interests of constitutional government and to abolish the distinction between Manchus and Chinese. Journalists employed on Government or revolutionary papers will be excluded.

ENCOURAGING THE ART OF PACKING.—Osaka has arranged for an exhibition in October at which the main feature will be a competition in the art of packing. All packers throughout the empire are being invited to attend.

SAN FRANCISCO'S UNRIVALLED HOTEL

The completion of the new extension to the St. Francis Hotel gives San Francisco one of the largest and best appointed hostleries in the world. Ever since it was opened in 1905, it has been famous for the beauty of its appointments and the excellence of its accommodations; and the additions increase the capacity of the house nearly fifty per cent, making possible many improvements and novel features. During and after the great disaster of 1906 the St. Francis was the only large hotel in San Francisco that was able to keep running. Its location facing Union Square, in the heart of the theater, shopping and club district, is unrivalled; while the architecture is so arranged that a majority of the rooms have a magnificent prospect. Under the management of Mr. James Woods the hotel has become famous around the world, and it is now prepared to accommodate its ever increasing patronage.

*LONDON, ENGLAND, METAL MARKET

The following are (Friday, July 1) prices of metals:—

COPPER.		£	s.	d.	£	s.	d.
*Tough cake and Ingot	.....	59	0	0	60	0	0
*Best Selected	.....	59	0	0	60	0	0
*Electrolytic	.....	60	0	0	60	10	0
*Sheets and sheathing	.....	60	0	0	—	—	—
*Flat bottoms	.....	72	0	0	—	—	—
STANDARD { Cash	.....	54	10	0	54	12	6
{ Three Months	.....	55	5	0	55	7	6
*Copper tubes, seamless per lb.	.....	0	0	8½	—	—	—
*Lake	.....	62	0	0	63	0	0
* Less 3¼ per cent.		† Net.					

ALLOYS.

BRASS: Wire	.....	0	3	6½	—	—	—
" Tubes (solid drawn)	.....	0	0	6½	—	—	—
" Sheets	.....	0	0	6½	—	—	—

TIN.

English ingots, f. o. b.	.....	148	0	0	149	0	0
" bars	.....	149	0	0	150	0	0
" refined	.....	150	0	0	151	0	0
Straits... { Cash	.....	149	10	0	149	15	0
{ Three months	.....	150	7	8	150	12	6
Australian spot	.....	—	—	—	—	—	—
Banks (in { Cash	.....	150	12	9	—	—	—
{ Three months	.....	150	6	3	—	—	—

LEAD.

Spanish or soft foreign	.....	12	11	3	12	13	9
English pig, common	.....	12	15	0	12	17	6
" L. B.	.....	13	7	6	—	—	—
" sheet and bar lead	.....	14	7	6	—	—	—
" pipe	.....	14	17	6	—	—	—
" red	.....	16	0	0	—	—	—
" white	.....	18	0	0	—	—	—
" patent shot	.....	16	0	0	—	—	—

SPELTER.

Silesian ordinary brands	.....	22	2	6	22	5	0
" special brands	.....	22	15	0	23	0	0
English Swansea	.....	22	15	0	23	5	0
Sheet zinc	.....	25	10	0	—	—	—

ANTIMONY.

Antimony	.....	27	0	0	29	0	0
" Crude	12	10	0	13	10	0
" Ore (basis 50%)	8	0	0	10	0	0

QUICKSILVER.

Flasks, 75 lbs. warrants	8	15	0	—	—	—
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ALUMINIUM. Per ton.

98-99 per cent.	72	10	0	75	10	0
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NICKEL. Per ton.

98-99 per cent. guaranteed	167	10	0	171	0	0
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PLATINUM.

Per oz. Troy, 130s.; nominal and subject to negotiation.

*Mining Journal.

FAR EASTERN STOCKS AND QUOTATIONS

Courtesy of Messrs. Kadoorie & Co., Hongkong, August 5, 1910.

STOCK.	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND.	Approximate Yield per cent per annum at Pre-Quotation	CLOSING QUOTATIONS
BANKS.											
Hongkong & Shanghai Banking Corporation	1865	\$15,000,000	120,000	\$125	\$125	{ £1,500,000 \$15,500,000 \$250,000	\$2,028,988	31-12-09	{ £2. 5/- for half year ending 31-12-09, @ ex 1/9½ = \$25.11	5%	{ 950 buyers £89 10s.
National Bank of China, Ltd.	1891	£699,475	10) 99,925	£7	£6	{ £4,000 \$400,000	\$34,167	31-12-09	\$2 (London 3/6) for 1903.	---	\$76 buyers
MARINE INSURANCES.											
Canton Insurance Office, Ltd.	1881	\$2,500,000	10,000	\$250	\$50	{ \$1,560,000 \$254,583 \$302,799	Nil.	31-12-08	\$10 for 1908.	6%	\$172½ sellers
North China Insurance Co., Ltd.	1903	£150,000	10,000	£15	£5	{ Tls. 222,000 Tls. 335,253 Tls. 146,586	Tls. 207,572	30-6-09	Final of 7/6 making 15/- for 1908.	5%	Tls. 115 buyers
Union Ins. Society of Canton, Ltd.	1867	\$3,100,000	12,400	\$250	\$100	{ \$3,000,000 \$90,000 \$287,984	\$287,984	31-12-09	{ Final of \$20 per share, making in all \$50 per share for 1908, and an int. div. of \$30 per share for 1909.	6%	\$850 sellers
Yangtze Ins. Association, Ltd.	1889	\$1,200,000	12,000	\$100	\$60	{ \$1,000,000 \$294,405 \$199,234	\$707,637	31-12-08	{ \$12 for year ending 31-12-08 and interim of \$3 on account of 1909.	7	\$205 sales
FIRE INSURANCES.											
China Fire Ins. Co., Ltd.	1870	\$2,000,000	20,000	\$100	\$20	{ \$1,000,000 \$550,348 \$61,168	\$438,406	31-12-09	\$6 and bonus \$2 for 1908.	7%	\$112 sales
Hongkong Fire Ins. Co., Ltd.	1868	\$2,000,000	8,000	\$250	\$50	{ \$1,460,000	\$426,218	31-12-09	\$27 for 1908.	8%	\$350 sellers
SHIPPING.											
China & Manila Steamship Co., Ltd.	1882	\$750,000	1) 30,000	\$25	\$25	{ \$57,734	Dr. \$3,777	31-12-09	\$4% for 1906.	---	\$7 sellers
Douglas Steamship Co., Ltd.	1883	\$1,000,000	20,000	\$50	\$50	{ \$230,000 \$100,589	Nil.	30-6-09	\$2½ for year ending 30-6-1908.	---	\$28 sellers
Hongkong, Canton & Macao Steamboat Co., Ltd.	1865	\$1,200,000	80,000	\$15	\$15	{ \$250,000 \$627,500 \$103,545 \$ 19,106	\$20,766	31-12-09	Final of \$1½ for 1909.	8%	\$32½ sellers
Indo-China Steam Navigation Co., Ltd. (Preferred)	1882	£600,000	(2) 60,000	£5	£5	{ £138,100	£7,537	31-12-09	No dividend paid for last two yrs.	---	\$65 sellers
Do. Do. (Deferred)			(2) 60,000								
"Shell" Transport & Trading Co., Ltd.	1898	£ 2,000,000	2,000,000	£1	£1	{ £720,000 £100,000	£192,994	31-12-08	{ 3rd interim of 2/- per share (coupon No. 12) making in all 4/- for 1908, and interim of 1/- for account 1909.	5%	{ 94½ buyers £11 buyers
"Star" Ferry Co., Ltd.	1898 1900	\$200,000	{ 10,000 10,000	\$10 \$10	\$10 \$5	{ \$71,850 \$82,831	\$1,159	30-4-10	{ A dividend of 7% for year ending 30.4.1901 and bonus of 5% making 12%	{ .5 4½	{ \$24 sellers \$13 sellers
REFINERIES.											
China Sugar Refining Co., Ltd.	1878	\$2,000,000	20,000	\$100	\$100	{ \$520,000 \$83,620	Dr. \$8,090	31-12-09	\$10 per share for 1909.	6%	\$167
Luzon Sugar Refining Co., Ltd.	1882	\$700,000	7,000	\$100	\$100	none	Dr. \$101,851	31-12-09	\$3 for 1907.	---	\$26 sellers
Perak Sugar Cultivation Co., Ltd.	---	Tls. 350,000	7,000	Tls. 50	Tls. 50	Tls. 100,000	Tls. 6,302	31-8-09	Tls. 10 for year ending 31-8-09.	---	Tls. 800 sales
MINING.											
Chinese Engineering & Mining Co., Ltd.	1901	£1,000,000	1,000,000	£1	£1	{ £215,000 £84,390	£1,435	28-2-09	Final of 1/6 making 3/- for 09.	9%	Tls. 16 sellers
Headwaters Mining Co.	1908	£600,000	28) 600,000	£10	£10				First year.		£10 buyers
Raub Australian Gold Mining Co., Ltd.	1892	£200,000	{ 150,000 50,000	£1 £1	18-10 £1	{ £4,873	Dr. ....	..	112 per share, 13th div.	5%	\$7½ buyers
Oriental Consolidated Mining Co. Ltd.	---	\$5,000,000	500,000	\$10	\$10	none	....	..	{ Final of gold \$0.65 for 1909 in all g \$15.	..	41/-
DOCKS, WHARVES AND GODOWNS.											
Fenwick (Geo.), & Co., Ltd.	1889	\$450,000	18,000	\$25	\$25	{ \$25,275 \$550,000	Dr. \$8,460	31-12-09	\$1½ for year ending 31-12-06.	---	\$10
Hongkong & Kowloon Wharf & Godown Co., Ltd.	1886	{ \$3,000,000	{ 60,000	\$50	\$50	{ \$31,993 \$40,000	\$264,847	31-12-09	\$2½ for 1909.	4½%	\$54 buyers
Hongkong & Whampoa Dock Co., Ltd.	1866	\$2,500,000	50,000	\$50	\$50	{ \$38,412 \$221,000	\$132,765	31-12-09	Interim of \$1½ for account 1909.	..	\$50 buyers
Shanghai Dock & Eng'g Co., Ltd.	1906	Tls. 5,570,000	13) 55,700	Tls. 100	Tls. 100	{ Tls. 1,000,000 Tls. 697,257	Tls. 6,261	30-4-09	{ Final of Tls. 3½ making Tls. 6 in all for 1909/10.	61	Tls. 77 sellers
Shanghai & Hongkew Wharf Co., Ltd.	1902	Tls. 3,600,000	36,000	Tls. 100	Tls. 100	{ Tls. 70,000 Tls. 125,000	Tls. 9,222	31-12-09	{ Final of Tls. 4 making Tls. 7 for 1909.	7	Tls. 118 sellers
LANDS, HOTELS AND BUILDINGS.											
Anglo-French Land Investment Co., Ltd.	1906	Tls. 2,500,000	3) 25,000	Tls. 100	Tls. 100	Tls. 25,000	Tls. 4,314	29-2-09	Tls. 6 for year ending 29-2-10.	5½	Tls. 97 sellers
Central Stores, Ltd.	---	\$751,845	16) 50,123	\$15	\$15	{ \$1,000	\$1,000	31-12-08	8% for 1909.	---	\$16 buyers
Hongkong Hotel Co., Ltd.	1866	{ \$600,000 \$400,000	{ 12,000 8,000	\$50 \$50	\$50 \$25	{ \$648,975 \$10,000	\$1,277	31-12-09	{ \$2.60 on old shares, \$1.30 on new shares, for ½ year ending 31-12-09.	---	{ \$104 buyers \$82 sellers
Hongkong Land Investment & Agency Co., Ltd.	1889	\$5,000,000	50,000	\$100	\$100	\$250,000	\$27,971	31-12-09	Interim of 3½ for 1910.	6½	\$98½ ex div. sales
Humphreys' Estate & Finance Co., Ltd.	1887	\$1,500,000	150,000	\$10	\$10	{ \$226,945 \$25,856	\$5,471	31-12-09	45 cents for 1909.	5½%	\$8½ sellers
Kowloon Land & Bldg. Co., Ltd.	1889	\$300,000	6,000	\$50	\$30	none	\$269	31-12-09	\$2½ for 1909.	8½%	\$32 sales
Shanghai Land Investment Co., Ltd.	1888	Tls. 3,900,000	78,000	Tls. 50	Tls. 50	{ Tls. 1,523,045 Tls. 300,000	Tls. 63,969	31-12-09	Interim of Tls. 3 for 1910.	61	Tls. 112
West Point Bldg. Co., Ltd.	1889	\$625,000	12,500	\$50	\$50	none	\$1,958	31-10-09	Interim of \$1.80 for 1910.	81	\$39
COTTON MILLS.											
Ewo Cotton Spinning & Weaving Co., Ltd.	1895	Tls. 1,000,000	5) 20,000	Tls. 50	Tls. 50	{ Tls. 250,000 Tls. 40,098	Tls. 10,991	31-10-09	Tls. 11 for year ended 31-10-09.	8½	Tls. 120 sellers
Hongkong Cotton Spinning, Weaving & Dyeing Co., Ltd.	1901	\$1,250,000	125,000	\$10	\$10	\$20,000	\$26,297	30-7-09	50 cents for year ending 31-7-08.	8%	\$5

FAR EASTERN STOCKS AND QUOTATIONS—(CONTINUED.)

STOCK.	WHEN ESTABLISHED	CAPITAL.	NO. OF SHARES.	VALUE.	PAID UP.	RESERVE	AT WORKING ACCOUNT.	DATE.	LAST DIVIDEND.	Approximate Yield per cent. per annum at present Quotation.	CLOSING QUOTATIONS
International Cotton Manufacturing Co., Ltd.	1895	Tls. 750,000	6) 10,000	Tls. 75	Tls. 75	Tls. 175,000	Tls. 8,372	30-9-09	Tls. 7½ for year end 30-9-09 (10%)	12%	Tls. 62
Laou-kung-now Cotton Spinning & Weaving Co., Ltd.	1895	Tls. 800,000	8,000	Tls. 100	Tls. 100	none	Tls. 4,829	31-12-08	Tls. 6 for 1909.	%	Tls. 68½
Soy Once Cotton Spinning Co., Ltd.	1895	Tls. 1,000,000	2,000	Tls. 500	Tls. 500	Tls. 31,172	Tls. 31,173		Tls. 25 for 1909.	10%	Tls. 240
MISCELLANEOUS.											
Bell's Asbestos Eastern Agency, Ltd.	1895	£5,377.10s.	11) 8,604	12/6	12/6	£1,500	£682	31-12-08	15% for 1908		\$3 sellers
Canna-Borneo Co., Ltd.	1903	\$720,000	8) 60,000	\$12	\$12	\$40,000	Nil.	31-12-08	5% for 1909	6%	\$9½ sellers
Canna Light & Power Co., Ltd.	1901	\$300,000	17) 50,000	\$5	\$5	none	\$46,483	31-7-09	60 cents for year ending 28-2-06		\$140 sellers
China Provident Loan & Mortgage Co., Ltd.	1898	\$1,250,000	7) 125,000	\$10	\$10	\$100,000	\$2,602	31-12-09	80 cents for 1909	9%	\$8½ sellers
Dairy Farm Co., Ltd.	1896	\$300,000	40,000	\$7½	\$6	\$10,000	\$1,850	31-7-09	\$1.20 for year ending 31-7-09	6½%	\$19½
Green Island Cement Co., Ltd.	1897	\$4,000,000	400,000	\$10	\$10	\$14,000	\$4,290	31-12-09	Final of 40 cts. making in all 75 cts. per share for 1909	10	\$6½ sellers
H. Price & Co., Ltd.	1907	\$120,000	19) 15,000	\$10	\$10	none	\$1,923.87	31-12-09	14% viz \$1.40 for 1909	12%	12
Hongkong Electric Co., Ltd.	1889	\$600,000	60,000	\$10	\$10	none	\$11,798	28-2-10	A dividend of \$1.20 per share and a bonus of 10 cents.	6	19½ buyers
Hongkong Ice Co., Ltd.	1881	\$125,000	5,000	\$25	\$25	\$150,000	\$12,662	31-12-09	Final of \$8 per share making in all \$10 1909	6	\$135 buyers
Hongkong Rope Manufacturing Co., Ltd.	1883	\$600,000	\$60,000	\$10	\$10	\$40,000	\$9,176	31-12-09	Final of \$1 making in all \$2 for 1909	9	\$21 buyers
Matschappij tot Mijer, Bosch en Landbouwenexploitatie in Langkat	1902	Gs. 2,500,000	25,000	Glds. 100	Glds. 100	Tls. 547,500 Tls. 63,914 21 Tls. 547,500	Tls. 316,682	31-10-08	Interim of Tls. 25 for 1910.	5	Tls. 1400 sellers
Peak Tramways Co., Ltd. (New)	1907	\$750,000	25,000	\$10	\$10	\$20,000	\$3,014	30-4-10	80 cents on fully paid shares & 8 cents on \$1 paid shares for year ending 30-4-10	5½	\$14 sellers
Philippine Co., Ltd.	1904	\$750,000	75,000	\$10	\$10	none	Pa. 18,640	31-12-08	None	—	\$10
Robinson Piano Co., Ltd.	1900	\$200,000	22) 4,000	\$50	\$50	\$5,000	\$61,138	31-8-08	6% for year ending 30.9.07	—	\$50 sellers
Saanghai-Sumatra Tobacco Co., Ltd.	1902	Tls. 600,000	9) 30,000	Tls. 20	Tls. 20	Tls. 24,820 w Tls. 75,000	Tls. 5,250	31-10-08	Final of Tls. 5 making Tls. 8 for 1908	2	Tls. 165 sellers
South China Morning Post, Ltd.	1903	\$150,000	6,000	\$25	\$25	none	Dr. 31,096	31-8-09	None	—	\$26 sales
Swan Laundry Co., Ltd.	1902	\$100,000	20,000	\$5	\$5	none	\$127.86	31-5-09	50 cents for year ending 30-5-10	8	\$5½ sales
Union Waterboat Co., Ltd.	1905	\$500,000	15) 50,000	\$10	\$10	\$11,956		31-12-08	60 cents for year-end 31-12-1908	6½	\$7½ buyers
United Asbestos Oriental Agency, Ltd.	1896	\$100,000	10,000	\$10	\$4	\$46,000	\$342	31-5-09	60 cents per ordinary share for year ending 31-5-09	5	\$11½ sellers
Watkins, Ltd.	1899	\$100,000	10,000	\$10	10	none	\$19.41	31-12-09	3½ for 1909	11%	\$2½ buyers
Watson (A. S.) & Co., Ltd.	1886	\$900,000	90,000	\$10	\$10	\$300,000 \$25,000	\$1,776	31-12-09	3% for 1909	—	\$7 sales
Weismann Limited	1904	\$30,000	3,000	\$10	\$10	\$12,250	\$67	31-7-09	10 per cent for year endg. 31.7.08.	10%	\$10 buyers
William Powell, Ltd.	1901	\$105,000	15,000	\$7	\$7	none	\$782	30-6-09	Final of 30 cents making 80 cents year ending June 30th 1906	—	\$2½ sellers
Societe des Pulpes et Papeteries du Tonkin		660,000	13,200	50	25				First year	—	\$29 (Hk. Cy.)
RUBBERS											
Allagar Rubber Estates, Ltd.	1909	\$85,000	29) 750,000	21-	21-	—	—	—	—	—	6½
Anglo-Malay Rubber Co., Ltd.	1905	\$150,000	1,500,000	21-	21-	—	—	—	80% for year ending 31.12.09	—	26½
Balgownie Rubber Estate, Ltd.	1905	\$200,000	11 20,000	\$1	\$1	\$7,400	\$11,205	31-3-09	100% for year ending 31.3.10	—	\$17 [Singapore]
Castlefield Rub. Ltd. [fully pd.]	1906	\$35,000	27) 32,650	\$1	\$1	none	—	—	—	—	122½
Damansara (Selangor) Rub. Co.	1906	\$110,000	25 110,000	\$1	\$1	nil.	\$2,220	31-12-08	50% for 1909	—	175½
Golconda Malay Rubber Co.	1907	\$80,000	26 80,000	\$1	\$1	nil.	nil.	—	25% for 1909	—	127½
Highland & Lnd. Para R. Co.											
Do. Do. [fully paid]	1906	\$310,000	181,454	\$1	\$1	—	—	—	35% for 1909	—	120½
Do. Do. [partly paid]			123,546	\$1	15½	\$8,784	—	—	—	—	
Kamuning (Perak) Rb. & Tin Co.			950,000	21-	1-	—	—	—	—	—	
do do A Shares	1909	\$200,000		\$1	\$1	nil.	nil.	—	—	—	7½ prem.
do do B Shares			105,000	\$1	\$1	—	—	—	—	—	
Kuala Lumpur Rubber Co., Ltd.	1906	\$180,000	180,000	\$1	\$1	\$4,000	1,82	—	30% for 1909	—	195½
Linggi Plantations, Ltd. (ord.)	1895	\$100,000	10,000	\$1	\$1	—	—	—	50 interim	—	56½
Do. Do. (7% pref.)				\$1	\$1	—	—	—	—	—	Nominal
Ledbury Rubber Estates Ltd.	1908	\$125,000	60,000	\$1	\$1	—	—	—	17½ for 1909	—	82½
Do. Do. (contrib.)			40,000	\$1	7½	—	—	—	—	—	
Sagga Rubber Co., Ltd.	1903	\$20,000	24) 2,000	\$1	\$1	nil.	nil.	—	25% for 1909	—	130½
Sandycroft Rubber Co.	1904	\$100,000	50,000	\$2	\$2	\$20,000	\$1,275	31.1.08	150% for year ending 31.1.10	—	\$35
Sekong Rubber Co., Ltd.	1908	\$80,000	27) 80,000	\$1	12½	nil.	nil.	—	—	—	32½ prem.
Shelford Rubber State Ltd.	1904	\$65,000	65,000	\$1	\$1	nil.	\$836	31.12.08	7½ for 1909	—	78½ ex div.
Singapore & Johore Rb. Co., Ltd.	1903	\$250,000	2,500	\$2	\$2	nil.	nil.	—	25% interim	—	\$16
Sungei Choh. Rb. State Co., Ltd.	1907	\$45,000	45,000	\$1	\$1	nil.	nil.	—	—	—	107½
Sungei Karar Rubber Co.	1906	\$110,000	23) 110,000	\$1	\$1	nil.	\$3,448	31.12.08	37½ for 1909	—	16½
Toerangie Rubber Co.	1910	\$100,000	51,000	\$1	7½	—	—	—	First year	—	2½ prem.

LOANS AND DEBENTURES.	AGENTS FOR THE LOAN.	AMOUNT OF LOAN.	PAR VALUE.	OUTSTANDING BONDS.	WHEN PAYABLE.	CLOSING QUOTATIONS.
China Government, 7 per cent. Silver Loan 1896 E.	Hongkong & Shanghai Banking Corporation.	Tls. 767,200	Tls. 250	1914	Mar. 31st and Sept. 30th each year until Mar. 31st, 1917	par.
Hongkong Hotel Company, Ltd., 6 per cent. Mortgage Debentures of 1899		\$750,000	\$500	\$ all	Half yearly, June 30th and December 31st	par
Shanghai & Hongkew Wharf Company, Ltd., 6 per cent. Debentures of 1902		Tls. 543,900	Tls. 100	—	Half yearly, June 30th and December 31st	Tls. 103½
Astor House Hotel Company, Ltd., 8 per cent. Debentures of 1903		Tls. 500,000	Tls. 100	—	Half yearly, January 1st and July 1st	102½
Chinese Engineering & Mining Co., Ltd., 6 per cent. Debentures of 1903	Russo Chinese Bank	\$500,000	1	\$431,960	Half yearly, June 30th and December 31st	par.
International Cotton Manufacturing Co., Ltd. 7% Debentures of 1901		Tls. 500,000	Tls. 100	11	Half yearly, March 31st and Sept. 30th	Tls. 97½

a Authorized capital \$2,000,000.
b Building Reserve Account.
c Capital Reserve Fund.
d Depreciation Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund.
h Exchange Reserve Account.
i Insurance Fund.
j Reinsurance Fund.
k Contingencies Account.
l Legal Reserve Fund.
m Authorized Capital.
n Sinking Fund.
o Raw Sugar Reserve Account.
p Premium on New Issues.
q Boiler Repairs and Renewals Account.
r Repairs and Renewals Account.
s Silver Reserve Fund.

t Depreciation and Repair Account.
u Underwriting Suspense Account.
v Special account.
w Special Works Fund.
x Extra Reserve Fund.
y 72,560 owned by the Company.
z 7,200 shares unissued.
1 4,000 shares unissued.
2 First issue of 60,000, of which 10,411 unallotted.
3 5,000 shares unissued.
4 4,480 shares unissued.
5 5,000 shares unallotted.
6 1,616 shares unallotted.
7 75,000 shares unissued.
8 14,000 shares unissued.
9 17,000 shares unissued.
10 40,453 shares actually issued.
11 7,698 shares actually issued.
12 4,200 shares unissued.

13 500 shares unissued.
14 399 shares unissued.
15 22,277 shares unissued.
16 10,000 shares unissued.
17 Special shares are entitled to half of the profits.
18 Capital contributed by Chinese Government-Kuping Tls. 5,000,000.
19 12,000 issued only.
20 Typhoon and Floods Insurance Fund.
21 Special Cash Reserve.
22 1000 shares unissued.
23 10,000 shares unissued.
24 4595 part paid shares.
25 7,500 shares unissued.
26 10,000 shares unissued.
27 2,350 shares unissued.
28 25,000 shares unissued.
29 100,00 shares unissued.

30) 3,700 fully paid vendor shares and an option of 5,000 shares at par for 5 years granted to option holders.
* Based on last year's dividend.
** Based on present dividend.
† 216 held by the Company.
‡ Only Tls. 134,000 taken up.
§ In certificates of £20 and £100.
|| Redeemable in 10 years, or at option of Comp., the Company giving 6 months notice.
† Redeemable at par at rate of £10,000 per annum from 31st December 1903 to 31st December 95.
*** Redeemable at par on 30th June, 1915.
Dr Deficit.
†† Singapore dollars.
‡‡ 4,880 shares unissued.
× 16,756 shares unissued.
§§ 25,000 shares unissued.
||| 4140 shares unissued.

ADDITIONAL SHANGHAI SHARE QUOTATIONS

July 29, 1910

STOCK	CLOSING QUOTATIONS	HIGHEST AND LOWEST PRICES DURING THE WEEK	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	LAST DIVIDEND	WHEN PAID
Oriental Consolidated Mining Co., Ltd.	35 1/10		G. \$5,000,000	500,000	G. \$10	G. \$10	none	Interim of Gold 50 for 1910.....	June 10, 1910
Vulcan Iron Works, Limited	Tls. 40		Tls. 500,000	1,000	Tls. 500	Tls. 500	—	Tls. 50 for year ended 31.3.06.....	Nov. 1, 1906
Yangtze Wharf & Godown Co., Limited	Tls. 207		Tls. 250,000	2,500	Tls. 100	Tls. 100	Tls. 50,000	Tls. 15 for 1909.....	April 1, 1910
Wei-hai-wei Land & Building Co., Limited	Tls. 9 nominal		Tls. 91,850	3,674	Tls. 25	Tls. 25	—	Interim of \$2.00 for 1909.....	Aug. 8, 1909
Anglo-German Brewing Co., Limited	\$85 buyers		\$100,000	4,000	\$100	\$100	none	5% for 1909.....	Mar. 12, 1910
Butler Tile Works, Limited	Tls. 25		Tls. 60,000	1,200	Tls. 50	Tls. 50	—	Tls. 3 for year ending 31.3.09.....	June 8, 1909
Major Bros., Limited	Tls. 55		Tls. 300,000	6,000	Tls. 50	Tls. 50	—	—	—
Oriental Ice Company, Limited	Tls. 20		Tls. 130,000	2,600	Tls. 50	Tls. 50	—	First year.....	—
Scharffs Oil and Bone Mills, Ltd.	Tls. 40		Tls. 200,000	4,000	Tls. 50	Tls. 50	—	First year.....	—
Shanghai Ice Company, Limited	Tls. 12		Tls. 200,000	8,000	Tls. 25	Tls. 25	—	3% for 1907.....	Mar. 14, 1908
Campbell, Moore & Co., Limited	\$10		\$12,000	1,200	\$10	\$10	\$9,000	\$3 for 1905.....	Apr. 2, 1906
Dunning & Company, Limited	\$45 sellers		\$100,000	2,000	\$50	\$50	—	\$5 year ending 28.2.08.....	Apr. 15, 1908
J. Llewellyn & Co., Limited	\$60 nominal		\$72,000	1,200	\$60	\$60	—	7.20 for 1909.....	May 1, 1910
Lane, Crawford & Company	\$50		\$250,000	2,500	\$100	\$100	—	Final of 3% making 6% for 1908.....	June 8, 1909
S. Moutrie & Company, Limited	\$40		\$250,000	5,000	\$50	\$50	—	\$2 for year ended March 31, 1909.....	June 18, 1909
Weeks & Company, Limited	\$23		\$400,000	20,000	\$20	\$20	\$40,000	Final of 6% making 10% for 1909.....	June 1, 1910
Dominion Rubber Co., Limited	Tls. 62 1/2		Tls. 225,000	22,500	Tls. 10	Tls. 4	—	First year.....	—
Kalumpang Rubber Co., Ltd.	Tls. 700		Tls. 700,000	14,000	Tls. 50	Tls. 50	** Tls. 11,844.48	16% for 1908.....	Nov. 9, 1906
Sanawang Rubber Estates Company, Limited	Tls. 1550		Tls. 250,000	2,500	Tls. 100	Tls. 100	—	—	—
Tebong Rubber and Tapioca Estate, Limited	Tls. 48		Tls. 476,000	76,000	Tls. 21	Tls. 21	—	—	—
Shanghai Mercury, Limited	Tls. 50 buyers		Tls. 105,500	2,100	Tls. 50	Tls. 50	—	Final of 6% making 16% year 1909.....	June 22, 1910
Shanghai Mutual Telephone Co., Limited	Tls. 67 1/2 buyers		Tls. 675,000	13,500	Tls. 50	Tls. 50	—	Tls. 3 for 1907.....	June 28, 1909
China Export, Import & Lumber Company, Limited	Tls. 75		Tls. 350,000	500	Tls. 100	Tls. 50	—	5 p. c. for 1909.....	May 1, 1910
China Printing Co., Limited	Tls.		Tls. 750,000	1,500	Tls. 50	Tls. 50	—	7% 1908.....	Apr. 18, 1909
Hirano Mineral Water Co., Ltd.	Y. 10		Y. 125,000	5,000	Y. 25	Y. 25	—	{ 10% = yen 2 1/2 for year ending 30th Sept. 08 Y. 1.20 for year ended Feb. 29.....	Apr. 26, 1909
E. E. Porter & Co., Limited	\$50		\$100,000	2,000	\$50	\$50	—	\$6 for 1907.....	Apr. 22, 1908
Shanghai Electric & Asbestos Company, Limited	\$21 sellers		\$125,000	5,000	\$25	\$25	—	8% for year ended Feb. 28, 09.....	June 21, 1906
Shanghai Electric Construction Company, Limited	\$26 sellers	£11	£320,000	32,000	£10	£10	—	First year.....	—

DEBENTURES

LOANS	PRICE—PLUS ACCRUED INTEREST	AMOUNT OF LOAN	OUTSTANDING	NOMINAL VALUE	RATE OF INTEREST	WHEN PAYABLE
Shanghai Municipal Debentures.....1892	Tls. 92 1/2	Tls. 50,000	Tls. 45,400	Tls. 100	5 %	June & Dec.
do.....1893	" 96	" 125,000	" 32,000	" 100	5 1/2 "	Do
do.....1894	" 105	" 105,000	" 60,000	" 100	6 "	Do
do.....1895	" 92 1/2	" 115,000	" 32,600	" 100	5 "	Do
do.....1896	" 92 1/2	" 140,000	" 131,800	" 100	5 "	Do
do.....1897	" 92 1/2	" 268,500	" 268,400	" 100	5 "	Do
do.....1898	" 105	" 300,000	" 60,000	" 100	6 "	Do
do.....1900	" 96	" 33,900	" 31,700	" 100	5 1/2 "	Do
do.....1901	" 105	" 250,000	" 200,000	" 100	6 "	Do
do.....1902	" 105	" 150,000	" 150,000	" 100	6 "	Do
do.....1903	" 105	" 490,500	" 490,500	" 100	6 "	Do
do.....1904	" 105	" 214,500	" 214,500	" 100	6 "	Do
do.....1905	" 105	" 320,000	" 320,000	" 100	6 "	Do
do.....1907	" 105	" 250,000	" 250,000	" 100	6 "	Do
Chinese Imperial Government Loan.....1886 E	" 250	" 767,200	" 351,400	" 250	7 "	Mar. & Sept
Shanghai Land Investment Co., Debentures.....1890	" 103 1/2	" 250,000	" 250,000	" 100	6 "	May & Nov.
do.....1892	" 96	" 250,000	" 250,000	" 100	5 1/2 "	June & Dec.
do.....1894	" 103 1/2	" 250,000	" 250,000	" 100	6 "	Mar. & Sept.
do.....1898	" 92 1/2	" 250,000	" 250,000	" 130	5 "	June & Dec.
do.....1900	" 103 1/2	" 250,000	" 250,000	" 100	6 "	April & Oct.
do.....1901	" 104	" 250,000	" 250,000	" 100	6 "	June & Dec.
do.....1901	" 96	" 100,000	" 100,000	" 100	5 "	May & Nov.
do.....1902	" 103 1/2	" 400,000	" 400,000	" 100	6 "	June & Dec.
do.....1905	" 103 1/2	" 250,000	" 250,000	" 100	6 "	Do
Shanghai Waterworks Co., Debentures.....1909	" 108	" 815,900	" 815,900	" 100	6 "	Do
Perak Sugar Cultivation Co., Debentures.....1902	" 101	" 200,000	" 200,000	" 100	7 "	April & Oct.
Shanghai Gas Co., Debentures.....1909	" 108	" 800,000	" 800,000	" 100	5 "	Do
Shanghai and Hongkew Wharf Co., Debentures.....1902	" 102	" 839,100	" 799,800	" 100	6 "	June & Dec.
Astor House Co., Debentures.....1905	" 103	" 750,000	" 500,000	" 100	7 "	Do
British Municipal Council, Hankow.....1901	Sh. " 105	H'kow Tls 100,000	H'kow Tls 100,000	" 100	7 "	June & Dec.
Shanghai Club Debentures.....1907	" 100	Tls. 170,000	Tls. 170,000	" 100	6 "	Do
Country Club Debentures.....1907	" 97	" 199,000	" 199,000	" 100	6 "	Do
do.....1907	" 97	" 92,000	" 92,000	" 100	6 "	Do
Lane Crawford & Co., Debentures.....1907	" 102 1/2	" 110,000	" 110,000	" 100	7 "	Mar. & Sept.
Anglo-French Land Debentures.....1908	" 102	" 250,000	" 250,000	" 100	6 "	June & Dec.
Central Stores Ltd. Debentures.....1908	" 102 1/2	" 250,000	" 250,000	" 100	8 "	Do
Shanghai Mutual Tel. Co. Debentures.....1909	" 102 1/2	" 350,000	" 200,000	" 100	6 "	Do

SINGAPORE SHARE QUOTATIONS

(COURTESY MESSRS. FRASER & CO., BROKERS, SINGAPORE, JULY 27, 1910)

Date of Formation	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers.	Sellers.
1903	\$300,000	300,000	30,000	10	10	—	10% interim for 1909.....	MINING		
1907	\$300,000	225,000	22,500	10	10	—		Belat Tin Mining Co., Ltd.....	3.00	3.25
1901	\$600,000	600,000	60,000	10	10	25,000	6% for year ending 30-4-09.....	Bruang Ltd.....	4.00	5.00
1907	\$400,000	375,000	37,500	10	10	—		Bruseh Hydraulic Tin Mining Co., Ltd.....	5.00	6.00
1901	\$260,000	60,000	60,000	1	1	—		Kanaboi, Ltd.....	2.00	2.30
1905	\$150,000	99,000	9,900	10	10	6,485.68	2 1/2- interim 1909.....	Kinta Tin Mines, Ltd.....	14.00	14.75
1906	\$120,000	120,000	120,000	1	1	—	35% for year ending 31-12-07.....	Kuantan Tin Mining Co., Ltd.....	3.00	3.25
1906	\$450,000	450,000	45,000	10	10	—	1 1/2- interim 1909.....	Labat Mines Ltd.....	8.50	9.00
1906	\$30,000	30,000	30,000	1	1	—		Malacca Tin Dredging Co., Ltd.....	2.00	2.75
1906	\$250,000	179,500	500,000	5/-	5/-	—		Malaya and Siam Corporation Ltd.....	7 1/2	10 1/2
1907	\$100,000	80,000	80,000	1	1	—		Pahang Consolidated Co., Ltd.....	4 1/2	5 1/2
1904	\$100,000	80,000	80,000	1	1	—		Pengkalan, Ltd.....	5.00	6.00
1904	\$120,000	100,000	100,000	1	1	6,000	45% for year ending 30-6-07.....	Pusing Bahru Tin Mines, Ltd.....	6.75	7.00
1907	\$450,000	300,000	30,000	10	10	—		Pusing Lama Tin Mines, Ltd.....	—	3.00
1905	\$27,000	27,000	27,000	1	1	—		Rahman Hydraulic Tin, Ltd.....	9.75	10.25
1892	\$200,000	200,000	200,000	1	1	4,873	1 1/2- for 1907.....	Rambutan, Ltd.....	11.50	12.50
1905	\$40,000	40,000	40,000	1	1	—	1 1/2 paid April, 1910.....	Raub Aust. Gold Ming. Co., Ltd.....	4.75	5.00
1900	\$110,000	110,000	22,000	5	5	—		Redhills Tin Mining Co., Ltd.....	3.00	3.50
1907	\$350,000	500,000	50,000	10	10	—	3% for year ending 22-1-09.....	Royal Johore Tin Mining Co., Ltd.....	1.35	1.50
1907	\$80,000	80,000	80,000	1	1	—		Salak South, Ltd.....	1.75	3.00
1906	\$850,000	850,000	85,000	10	10	25,000	5% interim 1909.....	Sempam Tin Mines, Ltd.....	2.00	2.50
1899	\$230,000	230,000	23,000	10	10	—	3% for 1/2 year ending 31-12-08.....	Serendah Hydraulic Tin Ming. Co., Ltd.....	5.75	6.50
1909	\$200,000	\$150,000	15,000	10	10	—		Sipiau Tin Co., Ltd.....	1.50	2.00
1907	\$90,000	70,000	70,000	1	1	—		Sungei Gau Tin Mining Co., Ltd.....	4.00	5.00
1906	\$150,000	150,000	150,000	1	1	—	1 1/2 interim 1909.....	Tekka, Limited.....	22.00	24.00
1902	\$160,000	160,000	160,000	1	1	—	1 1/2- interim 1909.....	Tongkah Harbour Tin Dredging Co., Ltd.....	10.00	11.00
							3 1/2- interim 1909.....	Tronoh Mines, Ltd.....	13.00	13.50

SINGAPORE SHARE QUOTATIONS.—(CONTINUED.)

Date of For- mation	Capital	Capital paid up	No. of Shares Issued	Issue Value	Paid up	Reserve	Last Dividend	Name	Buyers.	Sellers.
1909	£85,000	75,000	750,000	2/-	2/-	—	—	STERLING RUBBER	—	—
1905	£150,000	150,000	1,500,000	2/-	2/-	—	80% for 1909	Allagar Rubber Estates, Ltd.	5/9	6/3
1909	£50,000	35,250	470,000	2/-	1/6	—	—	Anglo-Malay Rub. Co., Ltd.	15.3	16.9
1904	£30,000	20,187 10/-	19,000	1/-	1/-	—	—	Batang Malaka Rubber Estates, Ltd.	1/-	2/- p.
1906	£80,000	70,000	70,000	1/-	1/-	—	50% for 1909	Batu Caves Rub. Co., Ltd.	17.0.0	17.10.0
1909	£100,000	74,454	57,816	1/-	1/-	—	2 1/2% for 1909	Batu Tiga (Selangor) Rubber Co., Ltd.	5.5.0	5.12.6
1907	£30,000	25,500	24,000	1/-	1/-	—	—	Bukit Kajang Rubber Estates, Ltd.	3.2.6	3.5.0
1903	£70,000	66,700	66,700	1/-	1/-	2,000	—	Bukit Lintang Rubber Estates, Ltd.	2.5.0	2.10.0p.
1906	£35,000	30,000	30,000	1/-	1/-	—	—	Bukit Rajah Rubber Co., Ltd.	5.7.6	5.15.0
1909	£225,000	175,000	1750,000	2/-	2/-	—	90% for 1909	Castlefield (K.) R. Estate, Ltd.	2.7.6	2.10.0p.
1904	£16,000	16,000	100,000	2/-	2/-	—	75% for 1909	Chersonese (F.M.S.) Estates, Ltd.	19.10.0	20.0.0
1905	£75,000	62,007	620,070	2/-	2/-	1,000	78 1/2% for 1909	Cicely Rubber Estates Co., Ltd.	6.0.0	6.7.6
1906	£110,000	102,500	102,500	1/-	1/-	—	80% for 1909	Consolidated Malay Rub. Estates, Ltd.	4/-	4/9
1903	£600,000	447,200	447,200a	1/-	1/-	—	50% for 1909	Damansara (Selangor) Rubber Co., Ltd.	2.10.0	2.12.6
1909	£45,000	40,000	400,000	2/-	2/-	—	—	Duff Development Co., Ltd.	1.7.6	1.10.6
1907	£80,000	70,000	70,000	1/-	1/-	—	15% for 1909	Edinburgh Rub. Estates, (Selangor) Ltd.	8.10.0	9.0.0
1906	£310,000	305,000	305,000	1/-	1/-	8,784	25% for 1909	Golconda Rubber Co., Ltd.	16/-	16/6
1904	£50,000	30,000	30,000	1/-	1/-	2,500	35% for 1909	Highlands & Lowda. Para Rub. Co., Ltd.	15/-	16/-
1909	£200,000	143,750	775,000p	2/-	1/-	—	25% interim	Inch Kenneth Rubber Estates, Ltd.	6.7.6	6.15.0
1905	£65,000	65,000	65,000	1/-	1/-	—	—	Kam. (P.) R. & T. Co., Ltd. "A" Shares	6.0.0	6.6.9
1909	£35,000	£17,250	155,000	2/-	1/-	—	10% for 1909	Kapar Para Rubber Estates, Co., Ltd.	15.15.0	16.5.0
1906	£180,000	180,000	180,000	1/-	1/-	—	—	Kota Tinggi Johore Rubber Co., Ltd.	6/-	7/- p.
1907	£100,000	90,000	900,000	2/-	2/-	—	30% interim	Kuala Lumpur Rubber Co., Ltd.	9.15.0	10.5.0
1907	£320,000	£252,067 10/-	198,930v	1/-	1/-	3,000	25% for 1909	Labu (F.M.S.) Rub. Co., Ltd.	19/-	20/-
1908	£125,000	75,000	60,000g*	1/-	1/-	—	27 1/2% for 1909	Lanadron Rubber Estates, Ltd.	6.15.0	7.0.0
1895	£100,000	98,324 8/-	883,244w	2/-	2/-	4,000	17 1/2% for 1909	Ledbury Rubber Estates Ltd.	5.10.0	6.0.0 p.
1907	£140,000	118,000	1,180,000k	2/-	2/-	—	50% interim	Linggi Plantations Ltd.	3.12.6	4.0.0
1909	£220,000	147,500	150,000	1/-	1/-	—	7% for 1909	London Asiatic R. & Produce Co., Ltd.	2.2.6	3.10.0p.
1906	£400,000	300,000	185,000	1/-	1/-	—	12 1/2% for 1909	Lumut Rubber Estates, Ltd.	2.17.6	2.19.6
1903	£210,000	175,000	1,750,000	2/-	2/-	—	10% interim for 1909	Malacca Rubber Plants, Ltd.	14/-	15/-
1906	£85,000	85,000	85,000	1/-	1/-	—	—	Merlimau Rubber Estates, Ltd.	1.0.0	1.7.6 p.
1909	£60,000	36,875	35,000	1/-	1/-	—	125% for 1909	Pataling Rubber Estates Synd. Ltd.	9.15.0	10.5.0
1904	£25,000	19,092	17,732u	1/-	1/-	—	12 1/2% interim 1909	Perak Rubber Plantations, Ltd.	9.15.0	10.5.0
1905	£100,000	100,000	71,378	1/-	1/-	—	—	Rembia Rubber Estates Ltd.	7/3	7/6
1907	£100,000	100,000	100,000	1/-	1/-	—	25% interim	Sagga Rubber Company, Limited	3.8.6	3.10.0
1898	£30,000	30,000	300,000	2/-	2/-	3,000	—	Sapong Rubber and Tobacco Estates, Ltd.	6.0.0	6.5.0
1909	£50,000	32,000	40,000	1/-	1/-	—	15% for 1909	Seaford Rubber Co., Ltd.	9/-	10/6 p.
1906	£65,000	65,000	65,000	1/-	1/-	—	28 1/2% for 1909	Seaford Rubber Co., Ltd.	1.0.0	1.7.6 p.
1909	£150,000	78,500	14,000t	1/-	1/-	—	7 1/2% for 1909	Selangor Rubber Co., Ltd.	9.15.0	10.5.0
1909	£120,000	100,000	100,000	1/-	1/-	—	—	Sendayan (F. M. S.) Rubber Co., Ltd.	7/6	7/6
1906	£192,500	192,500	1,925,000	2/-	2/-	—	—	Shelford Rubber Estate, Ltd.	3.12.6	3.17.6
1907	£45,000	45,000	45,000	1/-	1/-	—	7 1/2% interim	Singapore Para Rubber Estates, Ltd.	5.2.6	5.10.0
1906	£110,000	100,000	1,000,000	2/-	2/-	—	—	Sungei Choh Rub. Estate, Co. Ltd. Fullypd.	17/-3	18/-
1907	£70,000	55,000	55,000	1/-	1/-	—	37 1/2% for 1909	Sungei Kapar Rubber Co., Ltd.	4.12.6	4.17.6
1904	£50,000	50,000	50,000	1/-	1/-	—	—	Sungei Salak Rubber Co., Ltd.	6.2.6	6.12.6
1908	£150,000	60,000	36,000	1/-	1/-	—	—	Sungei Way (Selangor) Rub. Co., Ltd.	4.15.0	5.0.0
1907	£200,000	170,000	170,000	1/-	1/-	—	5% interim	Tebrau (Johore) Rubber Co.	3.2.6	3.7.6 p.
1908	£85,000	65,000	650,000	2/-	2/-	—	10% for year ending 30-6-09	United Serdang (S.) R. Plantations, Ltd.	6.15.0	7.5.0
1904	£60,000	50,600	506,000	2/-	2/-	—	66 2/3% interim 1909	United Sumatra Rubber Estates, Ltd.	12/-	12/9
1909	\$120,000	105,000	105,000w*	1	1	—	—	Vallambrosa Rubber Co., Ltd.	2.12.0	2.13.6
1909	\$750,000	700,000	140,000	5	5	—	—	DOLLAR	—	—
1905	\$200,000	151,200	151,200	1	1	5,250	40% interim	Alor Gajah Rubber Estate, Ltd.	2.50	3.00
1910	\$500,000	500,000	50,000	10	10	—	—	Ayer Panas Rubber Estates, Ltd.	10.00	10.50
1910	\$750,000	700,000	70,000	10	10	—	—	Balgownie Rub. Estate, Ltd.	17.00	18.00
1909	\$300,000	300,000	300,000	1	1	—	—	Bukit Timah Rubber Estates, Ltd.	20.00	22.00
1910	\$200,000	144,285	12,857m†	5	5	—	—	Changkat Serdang Estates, Ltd.	12.50	13.00
1910	\$600,000	150,000	30,000	10	5	—	—	Glencaly Plantations, Ltd.	2.50	2.75
1906	\$680,000	680,000	40,000	17	17	—	—	Haytor Rubber States, Ltd.	—	nom.
1909	\$250,000	200,000	20,000	10	10	—	—	Henrietta Estates, Ltd.	2.00	5.00 p.
1910	350,000	291,000	59,000	5	4	—	—	Hevea Rubber Planting Co., Ltd.	18.00	20.00
1907	\$300,000	140,000	20,000	10	7	—	—	Indragiri (S.) R. and Gutta P. Co., Ltd.	23.00	24.00
1910	\$1,000,000	1,000,000	500,000	2	2	—	—	Kelemak Rubber Estate, Ltd.	4.50	5.00
1909	\$400,000	400,000	80,000	5	5	—	—	Kombok Rubber Co., Ltd.	0.50 dis.	par.
1909	\$200,000	200,000	200,000	1	1	—	—	Malakoff Rubber Co., Ltd.	20.00	25.00p.
1910	\$500,000	450,000	45,000	10	10	—	—	Pajam Limited.	2.15	2.40
1910	\$450,000	295,000	45,000†	5	5	—	—	Pantai, Limited.	15.25	15.75
1904	\$100,000	100,000	50,000b*	2	2	20,000	50% pending	Pegoh, Limited.	1.80	1.90
1905	\$500,000	500,000	5,000	100	100	—	—	Port Dickson Rubber Co., Ltd.	35.00	37.00
1903	\$450,000	417,300	208,650	2	2	—	—	Sandycroft Rubber Co., Ltd.	14.00	15.00
1909	\$250,000	100,000	10,000	10	10	—	—	Singapore Rubber Co., Ltd.	5.00	6.00 p.
1909	\$200,000	165,000	33,000	5	5	—	—	Singapore & Johore Rub. Co. Ltd.	34.00	35.00
1909	\$1,000,000	637,500	737,500g*	1	1	—	—	Singapore Cold Storage Co., Ltd.	475.00	500.00
1903	£400,000	400,000	400,000	1	1	—	—	Singapore Dispensary Ltd.	75.00	16.00
1907	\$1,500,000	1,065,150	116,450	10	7	—	—	St. Helena Rubber Coy., Ltd.	40.00	45.00
1898	\$225,000	225,000	4,500	50	50	170,000	—	Teluk Anson Rubber Estate, Ltd.	6.50	7.50
1905	\$2,400,000	2,400,000	18,000	100	—	75,000	—	United Singapore Rubber Estates, Ltd.	1.50	1.80
1896	\$1,000,000	1,000,000	6,000	100	100	40,600	—	GENERAL	—	nom.
1901	\$34,000	34,000	4,000	100	100	—	—	Singapore Electric Tramways, Co., Ltd.	4/3	4/6
1899	\$875,000	875,000	2,750	100	100	175,000	—	Eastern Smelting Co., Ltd.	—	10.00 n.
1897	£3,500,000	3,500,000	2,500,000	1	1	1,120,000	—	Fraser & Neave, Ltd.	210.00	215.00
1903	\$600,000	250,000	25,000n	10	10	—	—	Howarth Erskine, Ltd.	58.00	60.00
1891	\$30,000	30,000	600	50	50	23,000	—	Katz Brothers, Ltd. Deferred	91.00	95.00
1884	\$200,000	200,000	2,000	100	100	75,000	—	Maynard & Co., Ltd.	—	125.00
1890	\$500,000	498,000	4,980	100	100	760,000q	—	Riley, Hargreaves & Co., Ltd.	77.50	82.50
1887	\$3,000,000	3,000,000	300,000	10	10	130,000r	—	Shell Transport and Trading Co., Ltd.	102.00	110.00
						1,222,409	—	Singapore Cold Storage Co., Ltd.	5.00	5.2.6
							—	Singapore Dispensary Ltd.	11.50	12.0.0
							—	Singapore Ice Co., Ltd.	15.00	16.00
							—	Straits Ice Co., Ltd.	50.00	52.50
							—	Straits Steam Ship Co., Ltd.	160.00	165.00
							—	Straits Trading Co., Ltd.	215.00	225.00
							—	DEBENTURES	57.00	57.50
							—	Howarth Erskine, Ltd. 6% \$ 600,000	—	par.
							—	Riley, Hargreaves & Co., Ltd. 6% 284,000	1%	3% p.
							—	Singapore Electric Tramways, Co., Ltd. 5%	—	nom.
							—	Singapore Municipal 5%	—	nom.
							—	" 4 1/2% of 1907	—	7% p.
							—	" 4 1/2% of 1909	—	8% p.
							—	" 4%	—	7% d.

a 152,800 unissued
 43,949 6% debenture
 54,500 £1 Pref. issued
 45,500 £1 " unissued
 100,000 5/- Ord.
 6,250 unissued
 £40,000 6% Debentures 220,000 unissued

p 175,000 unissued "A" shares
 q Sundry Reserves.
 r 5,000 issued £1 prem.
 s 50,220 unissued
 w 16,756

b* 221 7 1/2% Debentures
 d* 8,550 unissued
 e* 25,000
 f* £10,000 Convertible 6% Debentures issued
 £10,000 do. unissued
 n* 20,000 unissued

y* 262,500 "
 z* 10,000 "
 aa 50,000 "
 ab 6% Deb. Stock Convertible.
 ac 7,143 unissued.

ad 6% Deb. Stock Convertible.
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YOKOHAMA SHARE QUOTATIONS

COURTESY A. C. HUTTON POTTS, SHARE AND GENERAL BROKER, YOKOHAMA, JULY 21ST, 1910.

STOCKS.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	DATE.	LAST DIV- IDEND.	FOR TERM.	CLOSING QUOTATION.
Brett & Co., Ltd.	-Y- 28,000	2,800	-Y- 10	-Y- 10	31-12-09	12½%	for 1 year	15 Sellers
Club Hotel, Ltd.	185,000	1,850	100	100	31-3-10	6%	for 1 year	70 Nominal
Grand Hotel, Ltd.	500,000	5,000	100	100	31-12-09	2½%	for 1 year	95 Sales.
Helm Bros., Ltd.	186,000	3,720	50	50	31-12-09	17½%	for 1 year	85 Nominal.
Langfeldt & Co., Ltd.	100,000	2,000	50	50	31-12-09	10%	for 1 year	60 Sellers.
C. Nickel & Co., Ltd.	500,000	20,000	25	25	31-10-09	20%	for 1 year	50 Sales.
Thwaites, Limited.	100,000	2,000	50	50	First Year	—	—	—
Yokohama Engine and Iron Works	500,000	10,000	50	50	31-5-09	—	for 1 year	50 Nominal
Oriental Hotel, Ltd., Ordinary	250,000	3,000	50	50	31-8-07	12%	for 1 year	50 Sales.
Oriental Hotel, Ltd., Preference	250,000	2,000	50	50	—	8%	for 1 year	52:50 Sales
The Union Estate and Investment Co., Ltd.	1,000,000	10,000	100	100	30-9-09	6½%	for 1 year	100 Nominal.
The Clifford Wilkinson Tansan Mineral Water Co., Ltd.	500,000	5,000	100	100	31-12-09	7%	for 1 year	97 Sales.

† 285,000 unissued.
‡ 475,000 unissued.

*-Y- 390,000 issued.
§-Y- 375,800 issued.

DEBENTURE LOANS.	AMOUNT OF LOAN.	FACE VALUE OF DEBENTURES.	RATE OF INTEREST.	INTEREST PAYABLE.	CLOSING QUOTATION.
Brett & Company, Limited.	11,500.00	100.00	7%	1 June and 1 Dec.	95 Sales.
Yokohama United Club.	230,000.00	100.00	6%	30 June and 31 Dec.	102 Nominal.
Oriental Hotel, Limited.	350,000.00	100.00	8%	1 April and 1 Oct.	103 Sales.
Union Estate and Investment Co., Limited.	250,000.00	100.00	6%	30 June and 31 Dec.	95 Sellers.

JAPANESE STOCKS.	FACE VALUE.	AMOUNT PAID UP.	LAST DIVIDEND.	DIVIDEND PAYABLE.	CLOSING QUOTATION.
Bonds & Debentures.					
Exchequer Bonds 2nd issue.	-Y-100	-Y-100	5%	March and Sept.	-Y-101.20
Exchequer Bonds 3rd issue.	100	100	5%	March and Sept.	" 101.20
Railway Bonds (Ko-Gobu)	100	100	5%	June and Dec.	" 101.40
4% Imperial Loan Bonds (1st issue)	100	100	4%	June and Dec.	" 95.10
4% Imperial Loan Bonds (2nd issue)	100	100	4%	March and Sept.	" 95.80
Imperial 5% Bonds	100	100	5%	March and Sept.	" 101.30
Special 5% Bonds (issued 1906)	100	100	5%	June and Dec.	" 100.10
Yokohama Water Works Bonds	100	100	6%	June and Dec.	" 103.00
Yokohama City Public Loan Bonds	100	100	6%	March and Sept.	" 104.00
Osaka City Harbour Construction Bonds	100	100	6%	June and Dec.	" 103.00
Osaka City Public Loan Bonds	100	100	6%	June and Dec.	" 103.00
Kawasaki Dock Yards Co.'s Debentures	100	100	7%	June and Dec.	" 103.00
Tokyo Race Associations	500	500	30%	June and Dec.	" 180.00
Railways & Electric Trams.					
Tokyo Railway Company, Limited.	50	50	5 2½%	June and Dec.	" 74.40
Yokohama Electric Tramway Company, Limited.	50	50	6%	July and Jan.	" 54.00
Keihin Electric Tramway Company, Limited.	50	50	6%	June and Dec.	" 53.50
Southern Manchurian Railway Co., Ltd.	100	20	6%	June and Dec.	" 46.00
Hanshin Electric Tramway Co., Ltd.	50	50	12%	May and Nov.	" 130.00
Cotton Spinings.					
Kanagafuchi Cotton Spinning Company, Limited.	50	50	14%	July and Jan.	" 107.20
Fuji Gassed-yarn Company, Limited.	50	50	14%	July and Jan.	" 94.95
Tokyo Cotton Spinning Company, Limited.	50	50	8%	July and Jan.	" 44.05
Imperial Hemp Weaving Company, Limited.	50	50	12%	July and Jan.	" 68.00
Nisshin Boseki Kaishiki Kaisha.	50	17½	7%	—	" 14.35
Sugar & Beer Cos.					
Dai-nippon Sugar Refinery Company, Limited.	50	50	—	May and Nov.	" 35.50
Ensuiko Sugar Refinery Company, Limited.	50	20	20%	June and Dec.	" 52.60
Dai-nippon Beer Company, Limited.	50	50	12%	July and Jan.	" 81.65
Kirin Brewery Company, Limited.	50	50	7%	July and Jan.	" 53.50
Docks & Steamships.					
Yokohama Dock Company, Limited.	50	33	12%	June and Dec.	" 64.50
Uraga Dock Company, Limited.	50	50	—	July and Jan.	" 7.50
Kawasaki Dockyard Company, Limited.	50	50	12½%	Feb. and Aug.	" 54.00
Nippon Yusen Kaisha.	50	50	10%	May and Nov.	" 98.00
Hokkaido Tanko S. S. Company, Limited.	50	50	5%	July and Jan.	" 28.15
Miscellaneous.					
Tokyo Electric Light Company, Limited.	50	50	12%	June and Dec.	" 110.60
Tokyo Gas Company, Limited.	50	50	13%	July and Jan.	" 116.00
Yokohama Union Electric Light Company, Limited.	50	50	14%	June and Dec.	" 112.00
Fuji Paper Mills	50	50	6%	June and Dec.	" 27.50
Otaru Timber Company, Limited.	50	50	—	March and Sept.	" 8.00
Hoden Petroleum Company, Limited.	50	50	20%	April and Oct.	" 72.05
Tokyo Rope Manufacturing Company, Limited.	50	50	18%	June and Dec.	" 112.00
Japan Horse Improvement Company, Limited.	50	50	—	March and Sept.	" 14.00
Tokyo Stock Exchange Company.	50	50	15 1½%	June and Dec.	" 220.30
Osaka Electric Light Company, Limited.	50	50	16%	July and Jan.	" 147.00
Kobe Electric Light Company, Limited.	50	50	14%	July and Jan.	" 103.00

BANGKOK SHARE QUOTATIONS

(COURTESY MESSRS. EDWARDS & CO., BANGKOK, SIAM.) JULY 1, 1910

NAME.	BUYERS.	SELLERS.	LAST SALES.	ESTABLISHED.	CAPITAL.	NO. OF SHARES	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND	LAST DIVIDEND
Siam Electricity Co., Ltd.	Tcs. 300	Tcs. 325	Tcs. 325	1901	£ 300,000	30,000	£ 10-	£ 300,000	Tcs. 491 338	12% Tcs. 4 bon.
Paknam Railway Co., Ltd.	" 200	" —	" 220	1893	Tcs. 400,000	5,000	Tcs. 80	Tcs. 400,000	" 7,566	14%
Siam Tramway Co., Ltd.	" —	" —	" 108	1905	" 1,450,000	250 Shares 7250 Deb. 000 P. Shares	" 100	" 2,230,000	" 1,875	—
Meklong Railway Co., Ltd.	" 90	" 100	" 90	1907	" 2,230,000	22,300	" 100	" 223,000	" 28,000	5%
Bangkok Manufact. Co., Ltd.	" —	" —	" 132	1898	" 400,000	4,000	" 100	" 400,000	" 60,000	7% per for 6
Bangkok Dock Co., Ltd.	" —	" 135	" 135	1865	" 1,000,000	10,000	" 100	" 950,000	" 220,000	months
Siam Steam Packet Co.	" 80	" 909	" 90	1898	" 190,000	3,800	" 50	" 190,000	" 34,000	5%
Siam Commercial Bank	" 1,000	" 1,500	" 1,000	1906	" 3,000,000	3,000	" 1,000	" 3,000,000	" 338,850	4% for 6 mos.
Menam Motor Boat Co.	" 75	" 90	" 90	1905	" 200,000	2,000	" 100	" 200,000	" —	none
Transport Co., Motor	" —	" 75	" 100	1906	" 200,000	2,000	" 100	" 200,000	" —	—
Jenderata Rubber Co.*	" —	" 325-	" 325	1906	£ 40,000	4,000	£ 10	£ 7.-paid	" —	—
Bagan Rubber Co.	" —	" 100	" 100	1907	Tcs. 300,000	3,000	Tcs. 100	Tcs. 40 per share	" —	—
Siam Steam Navigation Co., Ltd.	" 300	" 325	" —	1909	" 2,000,000	10,000	" 200	" —	" 10,000	—
Siam Stone Works, Ltd.	" —	" —	" 100	1909	" 350,000	3,500	" 100	" 350,000	" —	6% half year
Kombok Rubber Co.	" 25	" 85	" 32	1906	\$ 300,000	30,000	\$ 100	\$ 7. per Share	" —	—

PHILIPPINE SHARE REPORT

AUGUST 10, 1910

NAME	WHEN INCORPORATED	AUTHORIZED CAPITAL	ISSUE VALUE OF SHARE	NO. OF SHARES	SUBSCRIBED	PAID UP	RESERVE	WORKING %	DATE	LAST DIVIDEND	CLOSING QUOTATIONS
American Drug Store.....	1908	P 100,000	P1,000	100	40	P1,000	.....	P 5,000	Jan. 4, 1909..	.....	No sellers.
*Banco Español Filipino.....	1851	3,000,000	200	15,000	8,439	200	P225,000	.....	.....	7% for year 1909....	200 buyers
Benguet Consolidated Mining Co....	1903	2,000,000	2	1,000,000	495,000	2	.....	38,000	Feb. 2, 1909..	.....	P1.00.
Benguet Commercial Co., Ltd.....	1908	200,000	10	20,000	7,360	10	.....	.....	.....	7% for year 1907....	P10.
Bua Mining Co.....	1905	300,000	100	3,000	2,620	100	.....	12,900	Dec. 5 1909.	.....	P100.
Cadwallader-Gibson Lumber Co....	1908	1,000,000	100	10,000	8,650	100	.....	.....	.....	.....	No sellers.
*Camote-Clayton Mining Co.....	1909	400,000	10	40,000	20,000	10	.....	.....	.....	.....	P10.
*Compania Maritima.....	.....	1,018,000	200	5,090	5,090	200	.....	.....	.....	.....	P50 sales
*El Varadero *e Manila.....	.....	350,000	100	3,500	3,500	100	.....	.....	.....	.....	Sellers 70
Electrical Supply Co., Inc.....	1909	100,000	100	11,000	500	72	.....	.....	.....	.....	No sellers
Export & Import Lumber Co.....	.....	200,000	200	1,000	1,000	200	.....	.....	.....	.....	No sellers.
*Fabrica de Hielo de Manila.....	1894	350,000	50	7,000	7,000	50	.....	.....	.....	18% for year 1908...	P75 sales.
*Germinal Cigar Factory.....	1900	500,000	500	1,000	1,000	500	P143,499	639.41	Dec. 31, 1909	15% for year 1909 and 6% on capital.....	500 sellers.
H. E. Heacock Co.....	1909	100,000	100	1,000	800	100	.....	.....	.....	First year.....	No sellers.
*Headquarters Mining Co. (Inc.)...	1908	600,000	10	60,000	35,000	10	.....	.....	.....	.....	P10 buyers.
Insular Lumber Co.....	1907	2,000,000	200	10,000	9,000	200	.....	.....	.....	.....	No sellers.
Juan Seiboth Co., Ltd.....	1908	150,000	20	7,500	500	20	.....	.....	.....	First year.....	.....
*La Concha Button Factory.....	1905	75,000	100	750	750	100	.....	.....	.....	15% for year 1909...	P110 sellers.
Lambert, Springer Co.....	1908	200,000	1,000	200	80	1,000	.....	.....	.....	.....	No sellers.
Luzon Stevedoring Co.....	1909	250,000	25	10,000	4,200	25	.....	.....	Sept 15, 1909	15%.....	P30.
Mindanao Herald Publishing Co....	1907	15,000	100	150	75	100	.....	.....	Dec. 31, 1908.	1/2 of 1% interim for 1908	No sellers.
Newspaper Publishing Co.....	1907	400,000	100	4,000	3,740	100	.....	.....	.....	.....	.....
Minas Carbon de Batan.....	1902	1,000,000	200	5,000	1,523	200	.....	136,812	.....	.....	200
Walter E. Olsen Co., Inc.....	1909	500,000	100	5,000	2,033	100	.....	.....	.....	First year.....	No sellers.
Paracale Gold Dredging Co.....	1907	£10,000	£1	10,000	9,000	£1	.....	.....	.....	.....	No sellers.
Palomar Park Amusement Co.....	1908	300,000	.....	300,000	60,312	.50	.....	.....	.....	.....	P1.
Phil. Hemp Machine Co., Ltd.....	1907	1,000,000	100	10,000	8,500	100	.....	.....	.....	.....	P100
Philippine Publishing Co.....	1907	600,000	200	3,000	2,181	200	.....	.....	Mar. 1st, 1909	P3 a share for 1908..	P50
Port Banga Lumber Co.....	1908	100,000	100	1,000	934	100	None.	40,000	First Saturday in January..	None.....	No sellers.
The Philippine Gold Dredging Co...	1907	200,000	10	20,000	20,000	10	.....	.....	.....	.....	No sellers.
*Philippine Co., Ltd.....	.....	750,000	10	7,500	7,500	10	.....	.....	.....	.....	P5 buyers.
Philippine Rosin & Turpentine Co..	.....	150,000	1	150,000	70,000	1	.....	.....	.....	First year.....	.....
Philippine Exploration Co.....	1908	2,000,000	10	200,000	90,000	10	.....	.....	.....	.....	9 buyers
The Rosenstock Pub. Co.....	1908	75,000	10	7,500	6,000	10	.....	.....	.....	.....	No sellers.
*San Nicolas Iron Works.....	.....	300,000	500	600	600	500	.....	.....	.....	.....	P200 sellers.
San Mauricio Gold Mining Co.....	1908	4,000,000	200	20,000	.....	.....	.....	.....	.....	First year.....	P200.
Tarlac Railway Co.....	1906	150,000	100	1,500	1,500	100	.....	P23,329	June 30, 1908.	.....	No sellers.
Union Hemp Machine Co.....	1909	50,000	10	5,000	2,600	10	.....	.....	.....	.....	No sellers
Zamboanga Cold Storage Co.....	1903	40,000	100	400	200	100	P8,500	.....	May 1st, 1909.	20%.....	P120.

* John T. Macleod's share list

PHILIPPINE BONDS

	DATED	AUTHORIZED	ISSUED	OUTSTANDING	PAR VALUE	RATE OF INT.	WHEN PAYABLE	LAST QUOTATION
Philippine Friar Land Bonds.....	Feb. 1st, 1904	\$7,000,000	\$7,000,000	\$7,000,000	\$ 100	4%	Feb. 1, 1914	104 1/2
Public Works and Permanent Improvement Bonds.....	March 1, 1905	\$5,000,000	\$2,500,000	\$2,500,000	\$ 100	4%	March 1, 1915	104 1/2
Do.....	Feb. 1, 1906	.....	\$1,000,000	\$1,000,000	\$ 100	4%	Feb. 1, 1916	104 1/2
Manila Sewer and Water Works Improvement Bonds.....	June 1, 1905	\$4,000,000	\$1,000,000	\$1,000,000	\$ 100	4%	June 1, 1915	104 1/2
Do.....	Jan. 2, 1907	.....	\$2,000,000	\$2,000,000	\$ 100	4%	Jan. 2, 1917	104 1/2
Philippine Railway First Mortgage Four per cent Thirty Year Sinking Fund Gold Bonds	July 1, 1907	\$15,000,000	\$5,736,000	\$5,736,000	\$1000	4%	July 1, 1937	97

*Payment of interest guaranteed until maturity or redemption by the Philippine Government.

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Ordinary tests. Calorific value. Elementary analysis

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and Electric Rail-
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ALPHABETICAL LIST OF ADVERTISERS

Alhambra Cigar & Cigarette Factory	27	Fearon, Daniel & Co.	13-30	Kawasaki Dockyard Co. Ltd.	7	Shanghai Nanking Railway	15
American Asiatic S. S. Co.	31	Fairbanks Morse & Co.	61	Kiangnan Dock & Engineering Works	8	Shanghai Machine Co.	26
American Hardware & Plumbing Co.	23	Ferro Machine & Foundry Co.	29	La Parisien Carriage Factory	34	Shanghai Waterworks Co. Ltd.	50
Anderson & Co., Wm. H.	39	Fox Typewriter	55	Lambert-Springer Co.	64	Shewan, Tomes & Co.	46
Anderson, Meyer & Co.	80	Fressel, C. & Co.	3	Lodge & Shipley Machine Tool Co.	27	Siemens Schuckert	17
Arnhold Karberg & Co.	19	Fushun Coal	32	Malthoid	48	Siemssen & Co.	22
Astor House Hotel Co.	27	Gardner Governor Co.	28	Melchers & Co.	57	Southern Pacific Co.	37
Atlantic, Gulf & Pacific Co.	32	Gas Engine & Power Co. and Charles L. Seabury & Co. Consolidated	20	Mitsu Bishi Dockyard & Eng. Works	5-45	South Manchuria Railway Mining Dept.	3
Baldwin Locomotive Works	32	General Electric Co.	38	Mitsui Bussan Kaisha	11	South Manchuria Railway	14
Banco Español Filipino	18	Germann & Co., Ltd.	29	Morse & Son, A. J.	6	Stevenson & Co., Ltd., W. F.	10
Bell, David W.	41	Germinal Cigar Factory	35	Murray, Wilbur H. Mfg. Co.	112	Strong, Frank L.	43
Bohler Bros. & Co.	35	Gordon & Co.	52	New Metropole Hotel	57	Superior Wrench Co.	29
British American Tobacco Co., Ltd.	35	Grand Rapids Gas Engine & Yacht Co.	29	New Engineering and Shipbuilding Works, Ltd.	50	Swift & Co.	32
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Export and Import Lumber Co.	23	Siemssen & Co.	52				

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Germann & Co., Ltd.

ALCOHOL DISTILLERS

Cia. General de Tabacos de Filipinas.
Ynchausti & Co.

ASBESTOS GOODS

Shanghai Electric & Asbestos Co., Ltd.

BANKS

Deutsch-Asiatische
Hongkong and Shanghai Banking Corp.
International Banking Corp.
Banco Español Filipino
Russo-Chinese Bank
Yokohama Specie Bank, Ltd.

BOILER MAKERS

Babcock & Wilcox (D. W. Bell)

BOILERS (PATENT WATER TUBE STEAM)

General Electric Co.
Jardine Matheson & Co.

BREWERIES

San Miguel Brewery

BRIDGE-BUILDERS

Atlantic, Gulf and Pacific Co.
White & Co., Inc., J. G.

BROKERS, GENERAL

C. S. Nicholson

BUILDING MATERIALS

California-Manila Lumber Com. Co.
Malthoid Paraffine Paint Co.
W. H. Anderson & Co.
Samuel McGregor & Co.

CABLES, TELEPHONE, TELEGRAPH SUPPLIES

David W. Bell
W. T. Henley's Telegraph Works Co., Ltd.
Melchers & Co.

CARRIAGES

Wilbur H. Murray Mfg. Co.

CEMENT

Anderson & Co., W. H.
Chee Hsin Cement Co., Ltd.
Chinese Engineering and Mining Co., Ltd.
Green Island Cement Co., Ltd.
Racine, Ackermann & Co.

CIGAR AND CIGARETTE MANUFACTURERS

Alhambra Cigar & Cigarette Factory.
Castle Bros.-Wolf & Sons
Cia. Gral. de Tabacos de Filipinas
Germinal Cigar Factory
Olsen & Co., Walter E.

CIVIL ENGINEERS

Eastern Eng. Co.
C. G. Young

COAL DEALERS

Chinese Engineering and Mining Co., Ltd.
The Mitsui Bussan Kaisha
South Manchuria Railway Co.
The Han-Yeh-Ping Iron & Coal Co. Ltd.

COAL HANDLING MACHINERY

Atlantic, Gulf & Pacific Co.

COFFEE DEALERS (WHOLESALE)

M. A. Clarke (Mayon)

CONTRACTORS, (GENERAL)

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Bohler Bros. & Co.
Frank L. Strong
Germann & Co., Ltd.
Gordon & Co.
Lambert-Springer Co.
Siemssen & Co.

CONTRACTORS, ELECTRICAL

Arnhold, Karberg & Co.
Electrical Supply Co. Inc.
Germann & Co., Ltd.
Shanghai Electric & Asbestos Co., Ltd.
Shewan Tomes & Co.
Frank L. StrongSiemens Shuckert
Siemssen & Co.

CONSULTING ENGINEERS

Atlantic, Gulf & Pacific Co.
Carmichael & Clarke.
Germann & Co., Ltd.
White & Co., Inc. J. G.
C. G. Young

DIVING APPARATUS

A. J. Morse & Son

DREDGERS

Dickson, Jones & Co.
Melchers & Co.
Rose, Downs & Thompson, Ltd.

DRY CELLS

T. H. Thompson.

EDUCATIONAL

I. C. S. Correspondence Schools.

ELECTRIC LIGHTING PLANTS

Anderson Meyer & Co.
Arnhold, Karberg & Co.
Electrical Supply Co. Inc.
Fearon, Daniel & Co.
General Electric Co.
Germann & Co., Ltd.
Siemens Shuckert
Siemssen & Co.
Shewan, Tomes & Co.
Western Electric Co.

ELECTRICAL SUPPLIES

Anderson Meyer & Co.
Arnhold Karberg & Co.
Electrical Supply Co. Inc.
Jardine, Matheson & Co.
Babcock & Wilcox (D. W. Bell)
Belliss & Morcom (D. W. Bell)
Fearon, Daniel & Co.
General Electric Co.
Melchers & Co.
Shanghai Electric & Asbestos Co. Ltd.
Shewan, Tomes & Co.
Siemens Shuckert
Siemssen & Co.
Western Electric Co.

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Belliss & Morcom (D. W. Bell)
Siemssen & Co.

EXCAVATORS AND ELEVATOR

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Rose, Downs & Thompson, Ltd
Siemssen & Co.

EXPLOSIVES

Jardine Matheson & Co.,

FIBRE MACHINERY

Dailey, C. E.

FOOD PRODUCTS

Anderson & Co., W. H.
Swift & Co.

GAS ENGINES

Fairbanks, Morse & Co.
Castle Bros.-Wolf & Sons
Detroit Engine Works
Shanghai Gas Co., Ltd.
Truscott Boat Mfg. Co.
Melchers & Co.

HARDWARE

Springer-Lambert Co.

HARNES MANUFACTURERS

Pickett Harness Co.

HOTELS

Astor House Hotel Co.
Hotel de France
Hotel St. Francis
Tokyo Imperial Hotel
New Metropole Hotel

ICE MACHINERY

Vulcan Iron Works

MELCHERS & CO

INJECTORS

Penberthy Injector Company.

INSURANCE

Stevenson & Co., Ltd., W. F.

JOURNALS, SCIENCE

The Philippine Journal of Science

LIFE INSURANCE

China Mutual Life Insurance Co., Ltd.
Shanghai Life Insurance Co., Ltd.

LITHOGRAPHERS

The Wen Ming Press.

LUMBER DEALERS

Cadwallader-Gibson Lumber Co.
California-Manila Lumber Com. Co.
Export and Import Lumber Co.
Insular Lumber Co.
Jardine, Matheson & Co.
Port Banga Lumber Co.

MACHINERY MERCHANTS

Anderson, Meyer & Co.
Arnhold Karberg & Co.
Shanghai Machine Co.
Fearon, Daniel & Co.
Frank L. Strong
Stuart S. Harvey
Siemssen & Co.
Schuchardt & Schutte.

MARINE ENGINES

Fairbanks Morse & Co.
Truscott Boat Mfg. Co.
Grand Rapids Gas, Engine & Yacht Co.

MILL MACHINERY

Rose, Downs & Thompson Ltd.

MINING MACHINERY

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Germann & Co., Ltd.
Melchers & Co.
Shewan, Tomes & Co.
Siemssen & Co.

MINING COMPANIES

Chinese Engineering & Mining Co.
South Manchuria Railway Co.
Mitsui Bussan Kaisha

MOTORS

Grand Rapids Gas, Eng. & Yacht Co.
The Gray Motor Co.
The Ferro Machine & Foundry Co.

MOTOR LAUNCHES

Earnshaw, M. & Co.
Gas Engine & Power Co. and Charles L.
Seabury & Co. (Consolidated)
Fairbanks, Morse & Co.

OFFICE FURNITURE

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F. A. Vander Loo & Co.
Lambert-Springer Co.
Shanghai Electric & Asbestos Co., Ltd.
Adam Cook's Sons

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Jardine Matheson & Co.
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Shanghai-Nanking.
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Southern Pacific Co.

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Arnhold Karberg & Co.
Fearon, Daniel & Co.
Jardine, Matheson & Co., Ltd.
Mitsui Bussan Kaisha
Siemssen & Co.
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Shanghai Machine Co.

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Santa Mesa Rope Works.
Ynchausti & Co.

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Lambert-Springer Co.
Shanghai Waterworks Co., Ltd.

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Insular Lumber Co.
Jardine, Matheson & Co.
Cadwallader-Gibson Lumber Co.
Port Banga Lumber Co.

SERUM

Bureau of Science

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Ynchausti & Co.

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Cia. General de Tabacos
Shewan, Tomes & Co.
Stevenson & Co., Ltd.
Warner, Barnes & Co., Ltd.

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Seabury & Co. (Consolidated)
Hongkong & Whampoa Dock Co., Ltd.
The Kawasaki Dockyard Co. Ltd.
Kiangnan Dock and Engineering Co., Ltd.
Mitsu Bishi Dock and Engineering Works
New Engineering and Shipbuilding Works, Ltd.
Shanghai Dock and Engineering Co., Ltd.
The Taikoo Dockyard and Engineering Company of Hongkong, Limited
Earnshaw, M. & Co.
Vulcan Iron Works, Ltd.

STEAMSHIP COMPANIES

American Asiatic S. S. Co.
China and Manila S. S. Co., Ltd.
China Merchants Steam Nav. Co.
Cia. General de Tabacos
Nippon Yusen Kaisha
Occidental and Oriental S. S. Co.
Pacific Mail S. S. Co.
Toyo Kisen Kaisha S. S. Co.
Transatlantica S. S. Co.
Ynchausti & Co.

STEEL MANUFACTURERS

United States Steel Products Export Co.

STEEL WORKS

Bohler Bros. & Co.
The Han-Yeh-Ping Iron and Coal Co. Ltd.
Hanyang Iron & Steel Works.

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Bohler Bros. & Co.
A. Gulf & Pacific Co.

SUGAR MACHINERY

Honolulu Iron Works.

TANKS

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Pacific Tank and Pipe Co.
Shanghai Dock & Engineering Co., Ltd.

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Green Island Cement Co., Ltd.
Chinese Eng. Mining Co.

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Cia. General de Tabacos
Olsen & Co., Walter E.

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Shanghai Machine Co.
Lambert-Springer Co.

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Remington Typewriter Co.

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Fairbanks, Morse & Co.
Defiance Machine Works.

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